

MacWEEK

13 March 1990 Vol. 4 No. 10 W O R K S T A T I O N N E W S

ColorStudio review
See Page 46

Graphics accelerators
See Comparison, Page 35

Adobe makes true Blue friend

By Pamela Pfiffner

Boston — IBM Corp. last week added a howitzer to Adobe Systems Inc.'s arsenal for the font wars.

At the Seybold Seminars '90 Professional Publishing Conference here last week, IBM announced that it will provide Adobe Type 1 fonts across its Systems Application Architecture (SAA), IBM's fundamental model for the design of software for its computers. This means that Adobe PostScript typefaces will be available on all IBM machines, from personal computers to mainframes, including Unix workstations.

The Armonk, N.Y.-based giant added that it will also provide

support for Apple's TrueType (formerly Royal) format. Microsoft Corp. is also committed to using TrueType in OS/2.

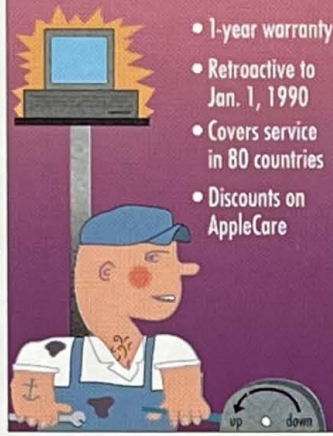
"In the PC arena we will provide our customers with a choice," said Lee Reiswig, IBM vice president of programming for entry systems. "We don't want to shut out those who have chosen to use something else."

Jim Gable, TrueType product manager at Apple, responded to IBM's announcement: "We are very pleased to see TrueType fonts on the OS/2 system. Now TrueType will be on every desktop system."

While IBM's announcement was

See Fonts, Page 8

Apple USA jacks up warranty



- 1-year warranty
- Retroactive to Jan. 1, 1990
- Covers service in 80 countries
- Discounts on AppleCare

NEVIN BERGER

At last, one full year

Apple yields to customer demand

By Raines Cohen and Connie Guglielmo

Cupertino, Calif. — Apple USA played catch up with the rest of the computer world last week, announcing that it has extended its 90-day warranty to one year.

The one-year warranty, already offered by all international Apple subsidiaries, covers all hardware

products sold in the United States and is retroactive to Jan. 1, 1990. All users also will be able to purchase AppleCare, Apple's extended service plan, at a discount through the end of May.

"It is the foundation upon which Apple will build an increasingly responsive and comprehensive service and support program," said Morris Taradalsky, Apple's vice president for Customer Service and Information Services Tech-

See Warranty, Page 10

Après Gassée, a fresh start



By Daniel Farber

Cupertino, Calif. — After weeks of dissension, during which top executives were purged and more than 400 employees laid off, a more stable Apple is beginning to emerge. But questions still linger about how successfully Apple CEO John Sculley will be able to fill the gap left by the resignation last week of Apple Products President Jean-Louis Gassée (see Gassée interview, Page 8).

Now that the dust has settled, power within Apple is concentrated in the hands of Sculley and Michael Spindler, who last month assumed responsibility for worldwide sales, marketing and manu-

facturing as Apple's new chief operating officer.

Spindler, previously president of Apple Europe, is widely considered a capable executive with the skills needed to revitalize Apple's sales and marketing in the United States.

"If he can do for Apple USA what he has done for Apple Europe, he will be successful," said Kin Seto, vice president of the Weilyenne Group, a marketing consulting firm in San Carlos, Calif. "But Spindler and Sculley need to make sure that they tie the marketing and product development efforts together so they truly reflect customer needs."

Customers seem pleased with some of the duo's early moves, including price cuts on the Mac SE and SE/30 and two LaserWriter models, and the extension of Apple warranties from 90 days to one year.

Although Sculley has assumed responsibility for overseeing Apple Products, which includes engineering, networking and communications, and advanced technology, Gassée's absence will be felt. He was a popular and respected manager among the troops. More than 200 people turned out for a Jean-Louis Gassée Appreciation Rally last month when rumors of his resignation filled the halls at Apple's campus here.

"Gassée was the key

See Apple, Page 8

Seybold crowd ponders Mac pre-press links

By Carolyn Said

Boston — Color pre-press emerged as a key issue at the Seybold Seminars '90 here last week.

Both in seminars and on the show floor, users and developers were debating whether desktop systems are now ready for high-volume work and simple enough for widespread business use.

The conference proved that "there has been a significant evolution in the color market," said Jonathan Seybold, president of Seybold Seminars, based in Malibu, Calif.

A substantial number of companies introduced either all-Mac pre-press solutions or better links

See Pre-press, Page 10

Ilfx enters uncharted market

By John Battelle

Cupertino, Calif. — The forthcoming Mac Ilfx, rife with features aimed at the high-end personal computer and workstation market, marks Apple's first serious assault on what has traditionally been the stronghold of vendors such as IBM

Corp., Sun Microsystems Inc. and Digital Equipment Corp.

While Apple may not call the Ilfx a workstation (see MacWEEK, March 6), it appears to perform like one. Competitive analysis documents reviewed by MacWEEK

See Mac Ilfx, Page 8

Ilfx a low-price leader?

Computer	CPU	Hard disk	RAM	Cache	Expansion slots	Warranty	Price
Apple Ilfx 4/80	68030/40Mhz	80	4	32K	6	1 year	11,145
Apple Ilfx 4/160	68030/40Mhz	160	4	32K	6	1 year	12,045
Compaq Deskpro 386/33	80386/33Mhz	84	2	64K	7*	1 year	14,496
Sun SPARCstation 1	SPARC/20Mhz	100	4	64K	3	90 days	16,095
IBM PS/2 Model 70 486	80486/25Mhz	60	2	none	3*	1 year	15,040
IBM PS/2 Model 70 386	80386/25Mhz	120	4	64K	3*	1 year	12,335
386/25Mhz clone	80386/25Mhz	80	4	32K	7*	1 year	2,966

Prices reflect Apple's own estimates and include operating system software, video display and additional RAM. *Not all slots are 32-bit.

L A T E N E W S

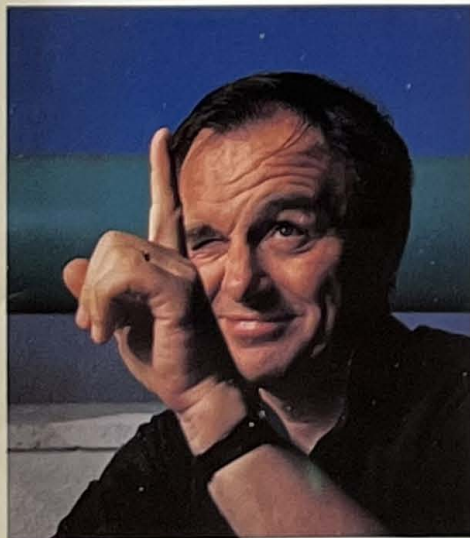
Jasmine execs bail out, Chapter 11 possible

San Francisco — Two top executives of Jasmine Technologies Inc. resigned last week, amid continuing complaints from customers about service and support and widespread speculation that the company will soon file for protection from creditors under Chapter 11 of the Federal Bankruptcy Act.

Both Patrick Silvagnia, president and chief operating officer, and Executive Vice President Barry Schuler have left the company, sources said. Company founder Dennis Chang remains as chairman and CEO.

The company, a pioneer in direct-sales marketing of Mac peripherals, has been negotiating intensely with potential sources of funding in recent weeks. But sources said investors were apparently deterred by the litigation in which Jasmine has been mired for several years, as well as by other problems. Jasmine has not shipped drives within the past month, sources also said.

Jasmine officials could not be reached for comment. □



CHUCK NALKE/PICTURE GROUP

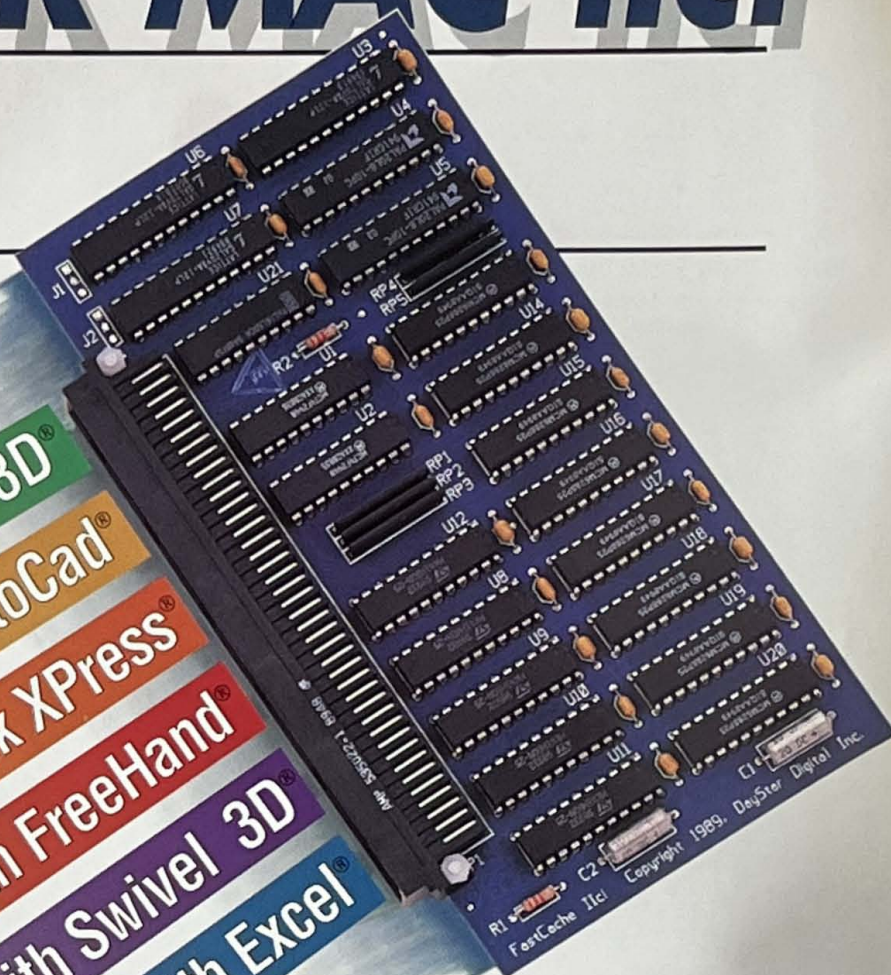
After nine years at Apple, Jean-Louis Gassée said it was time to bid adieu. Gassée spoke with MacWEEK (see story, Page 8).

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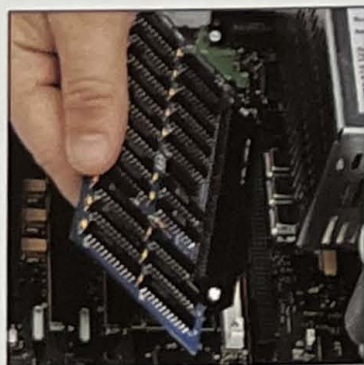


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TED2 stars agree: Technology reshaping art, entertainment

By Daniel Farber

Monterey, Calif. — Technology may no longer be anathema to the creative community of artists, writers and musicians. That, at least, was the feeling among attendees of the TED2 conference here last month.

"In the 1990s, communication is about the design of information using the appropriate technology as entertainment," said Richard Saul Wurman, conference co-chairman.

Many of the speakers combined the instruments of technology with creative design to shape entertaining, high-impact presentations.

The Mac was used to produce multimedia presentations such as film maker Robert Abel's interactive documentary about Pablo Picasso's "Guernica" painting and "Earth: Vital Signs," a multimedia

show and HyperCard stack on environmental issues. The latter was demonstrated by Payson Stevens of San Diego-based Internetwork Inc.

The list of attendees, said designer and TED2 (Technology, Entertainment and Design) co-chairman Harry Marks, was "like a roster to start a new civilization on another planet." Speakers included novelist Douglas Adams, musician Herbie Hancock, MIT Media Lab Director Nicholas Negroponte, Apple CEO John Sculley, techno-philosopher Ted Nelson, Apple Fellow Alan Kay, and virtual-reality explorers Jared Lanier and Scott Fisher.

One of the highlights of the conference was "Day in the Life of TED2," a Mac-based multimedia presentation that captured the event in digital form. Photojournalist Rick Smolan, creator of the "A Day in the Life" series of books, supervised the photographic record of the conference using Sony Pro-Mavica digital cameras. These digital images were transferred to the Mac, edited with Adobe Systems Inc.'s Photoshop and sequenced within a MacroMind Director presentation. A digital sound track for the presentation was created by composer Jeff Rona. □



The "Day in the Life of TED2" presentation was created using Sony digital cameras to capture still images, such as this photo of Apple CEO John Sculley, and transfer them to the Mac.

Aapps delivers DigiVideo boards

By Connie Guglielmo

Sunnyvale, Calif. — As part of its continuing mission to get users to tune into the video capabilities of their Macintoshes, Aapps Corp. is now shipping the second in its line of boards that bring live video to the computer screen at a low price.

Like its \$399 MicroTV board, the new DigiVideo converts live video from any source, including television, for black-and-white display in a window on Mac II machines (see MacWEEK, Jan. 9).

The \$595 DigiVideo, previously known as MicroTV Professional and VideoPro, offers a larger video window (256 by 216 pixels, or approximately 3 by 3.5 inches) for video display and capture. The professional version also supports MicroTV's 1.5-by-1.8-inch, or 128-by-108-pixel, window size.

Both boards display video with up to 128 gray levels. Frames can be captured to the Clipboard in PICT2 format by pressing the space bar.

In addition to a standard applica-

tion that emulates TV controls, DigiVideo ships with a HyperCard stack containing external commands that drive the board. Users can copy the XCMDs for use in their own stacks, Aapps said.

Registered owners of MicroTV can upgrade to DigiVideo for \$200.

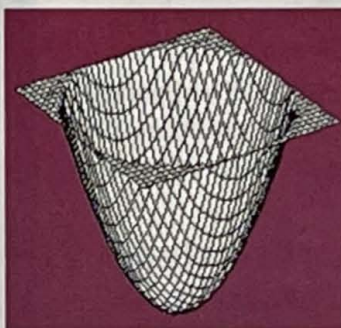
Aapps also said it is now shipping its developers kit, including sample stacks that show how to control the board from within HyperCard or Silicon Beach Software Inc.'s SuperCard.

The developers kit, available to MicroTV and DigiVideo owners for \$15, includes documentation detailing how the board's driver and brightness and contrast module operate. It also includes the Macintosh Programmer's Workshop and Think Pascal and Think C libraries for developers interested in incorporating the board drivers into their own applications.

Aapps Corp. is located at 756 N. Pastoria Ave., Sunnyvale, Calif. 94086; (408) 735-8550. □

News

- 4 Agfa unveils 50-MHz RIP
- 5 Caere Parallel OCR system promises speedier reading
- 6 Silicon Beach's SuperCard visible on the horizon
- 15 Farallon ships Ethernet connectors for "ethernet"
- 16 StackWEEK Steve Michel
Videodisc players do tricks VCRs can't, and they don't cost an arm and a leg either.
- 17 CompuServe to get two new looks
- 18 SPSS brings its stat pak to the Mac
- 22 New software matches color on film and screen



- 19 Systat 5.0: High-end statistics package gets full Macintosh interface and a variety of other improvements.

Opinion

- 24 Editorials
Evolutionary innovation of the Mac IIx will be Jean-Louis Gassée's legacy.

Now it's Sculley's turn to lead product development. Is he up to the task?

- 24 Letters
- 74 Mac the Knife

Organizational Mac



- 28 What price productivity? Peat Marwick discovers that the value of the Mac is difficult to quantify.

- 30 The Mac Manager Don Crabb

Apple responds to requests for improved customer service with denial and happy talk.

ProductWatch

- 35 Comparison: Graphics accelerators from SuperMac and Radius add zest to QuickDraw
- 35 Trends: Electronic computer-aided engineering on the Mac is no longer a short-circuit
- 36 MacInTouch
PhotoShop is the best example of the state of Mac applications; the MacPaint of the '90s does photo retouching, image editing and color painting.
- 46 Reviews in Brief: MacroMind Player and Accelerator
- 46 Review: ColorStudio brings pro photo-retouching results in an easy-to-use package
- 51 Review: Prograph lets you do object-oriented programming with icons
- 54 Help Desk David Ramsey
A heap of trouble: Mac memory-management begins with the System heap.

BusinessWatch



- 71 Parting of the ways: Preferred Publishers will go its own way under the leadership of founder Jonathan Whitman, while Frank Brooks Jr., above, remains in charge of Aapps Corp.

- 73 Apple promotes CD-ROM publishing by example

MarketWEEK

Projected growth in computer video technology will push it into the mainstream by 1993.

- 55 Ad Index
- 56 Mail Order
- 59 Ad Showcase
- 61 Classified
- 69 Career Opportunities

Interleaf documents to get smart

By Carolyn Said

Boston — Future versions of Interleaf Inc.'s publishing products will incorporate technology that lets users build intelligent documents capable of accessing information, evaluating it and acting upon it, the company announced here last week at Seybold Seminars '90.

"Active documents" created with the sys-

tem might include, for example, a report that could build itself by extracting and formatting relevant data from a corporate database, evaluating the data and then gathering other information. An expense form could tally itself, and a proposal could show or hide different sections depending on the viewer's security clearance, Interleaf said.

The company will both configure its active-document technology for customers' specific needs and offer users the tools to tailor it themselves.

The technology works by attaching scripts, or programs, to document objects such as paragraphs, titles and graphics. The scripts are triggered by specified events, such as when the user saves a document or the System clock reaches a certain date.

In addition to maintaining "hot links" to data located anywhere on the network, active docu-

ments can generate new data by running other applications. Hypertext links can be made conditional upon a variety of circumstances, such as a user's score on an interactive test or how many spelling errors a document contains.

Interleaf will add the active-document technology to Interleaf Publisher on all platforms it supports, including the Macintosh, by year-end, the company said. A developers toolkit will be available this summer.

Interleaf Inc. is located at 10 Canal Park, Cambridge, Mass. 02141; (617) 577-9800. □

Agfa Compugraphic imagesetter, RIP could tear up market

By Pamela Pfiffner

Boston — In a bid for the lead in the performance-hungry PostScript typesetting market, Agfa Compugraphic last week unveiled a 50-MHz raster-image processor and an imagesetter that combines highly precise media handling for four-color work with an array of new automation and performance enhancements.

Shown at Seybold Seminars '90 here were:

► The 9000 PS MaxPlus, which the company said is the first PostScript RIP based on a 50-MHz 68030 microprocessor. It has a 64-Kbyte memory cache, 8 Mbytes of RAM, a 68882 coprocessor and an 80-Mbyte hard disk that can be upgraded to 200 Mbytes.

► The ProSet 9800 imagesetter, which offers 150-line screening and resolutions of either 1,200 dpi, at a processing speed of 15 inches per minute, or 2,400 dpi, at 7.5 inches per minute. The machine uses dual-beam laser diode technology for faster imaging of color images.

Two sets of rollers positioned on either side of the media prevent stretching or distortion. A "top dead center" option automatically aligns the media for precise registration of four-color separations. Repeatability is accurate to within 1 mil.

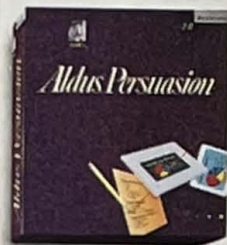
The device outputs to film, paper or paper plate — for printing directly on offset presses — with a maximum image area of 13 inches wide and 27 inches long. Automated media loading and cutting reduces the possibility of paper shift and eliminates the need for manual interruption when loading the media, the company said.

Users can program information about the length of the imaging run, the media width and other options for up to 10 cassettes. Other features include automatic motor cleaning and a standby mode, which shuts down essential machine functions but allows users to begin queueing up images immediately when the unit is turned back on.

The ProSet 9800 can be used with any Agfa Compugraphic RIP, including the 9000 PS MaxPlus. The new RIP is scheduled to ship next month and the imagesetter in May. The two will retail together for about \$71,000; Agfa has not yet set individual retail prices.

Agfa Compugraphic also announced that Adobe Systems Inc. has licensed AgfaType fonts for inclusion in Adobe's PostScript type library. Agfa will offer its complete library of 770 typefaces in Type 1 format on CD-ROM.

Agfa Compugraphic is located at 200 Ballardvale St., Wilmington, Md. 01887; (508) 658-5600. □

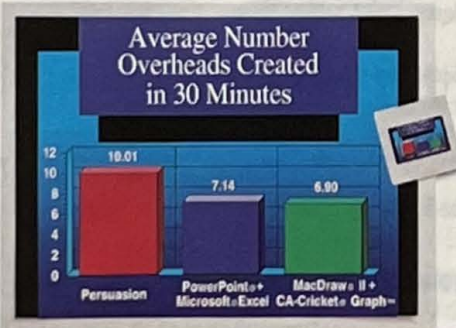


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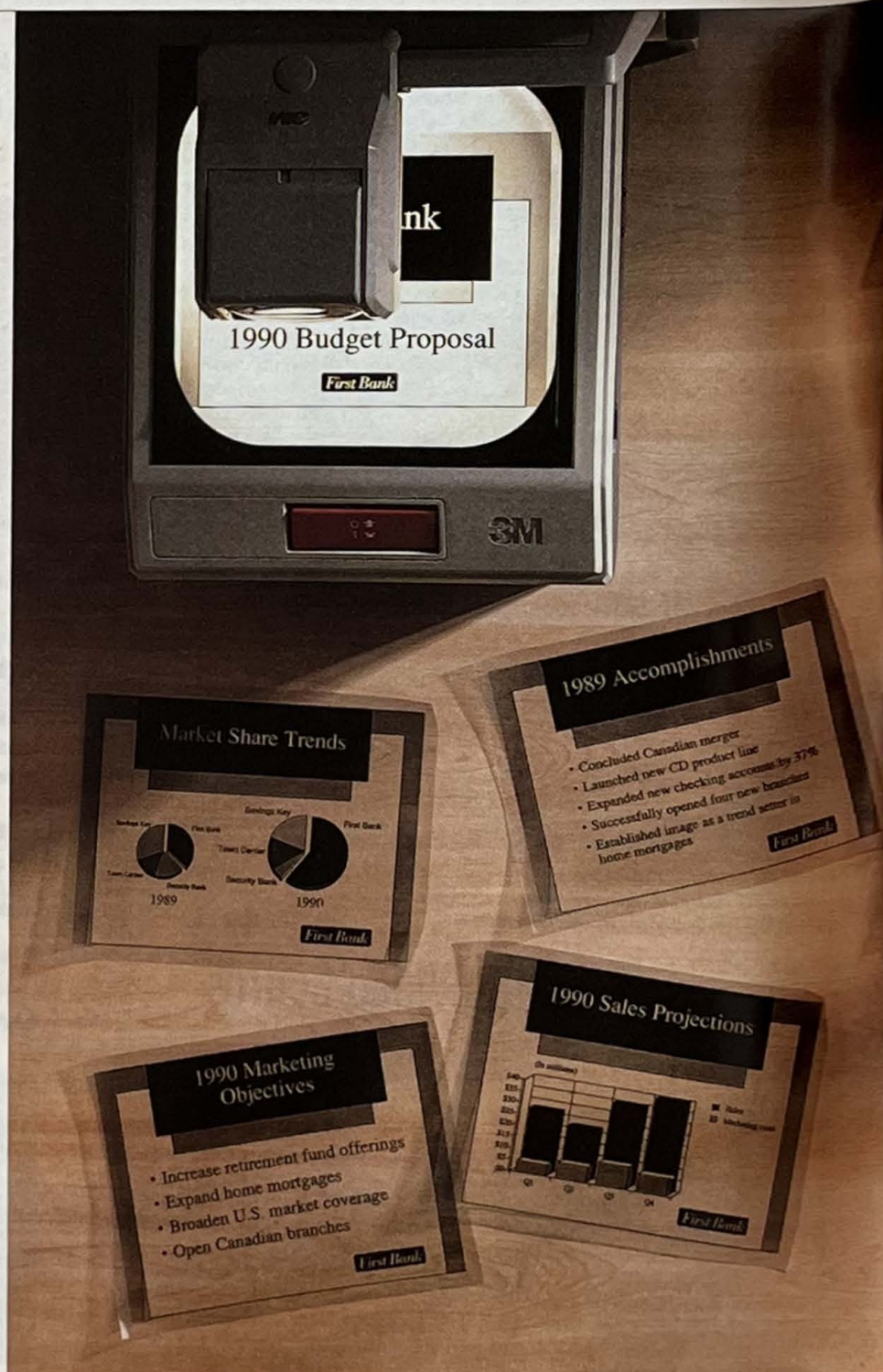
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Siclone cuts accelerator board prices

By Henry Norr

Boston — With Apple's own workstation-grade Mac waiting in the wings, Siclone Sales and Engineering Corp. last week slashed prices on its 33-MHz accelerator boards and rolled out a new 50-MHz card for the Mac II and IIX.

At 50 MHz, the new Si3050 Accelerator

offers 40 percent more speed than the older Si3033 card and delivers two to three times the performance of a stock Mac II or IIX, the company said. The board, which is shipping now to back-order customers and will go into general distribution later this month, has a list price of \$4,995, or \$5,995 with an optional 50-MHz floating-point coprocessor.

Targeted in part at the pre-press market, the board was introduced at the Seybold Seminars '90 here.

At the same time, Siclone said it has cut the price of the 33-MHz board from \$3,999 to \$2,495. Prices of the boards fitted with a 33-MHz math coprocessor were lowered from \$4,995 to \$2,995. Upgrades from the Si3033 to the 50-MHz board are available.

Siclone Sales and Engineering Corp. is located at 1515 Centre Pointe Drive, Milpitas, Calif. 95035; (408) 263-8207; (800) 862-2636. □

Caere Parallel Reader promises record OCR speed at bargain price

By Pamela Pfiffner and Henry Norr

Boston — Rolling out what it called "the world's fastest page-recognition machine," Caere Corp. last week unveiled the Parallel Reader, a networkable system that promises throughput of up to 2,500 words per minute.

At \$10,995, the optical character- and graphics-recognition machine will cost only a fraction of the price of traditional dedicated systems. It is built around an IBM PC-compatible motherboard powered by an 80386SX chip running at 16 MHz. Installed in the eight-slot box along with a 40-Mbyte hard disk are four coprocessor cards, each with a 16-MHz 68020 and 2 Mbytes of RAM. Two slots are left open for scanner and network-interface cards.

In what may become one of the first widespread applications of parallel processing, the Parallel Reader is designed so that each board handles a separate page. While the first board works on scanning and recognizing the contents of the first page, the second board starts work on a second page, and so on.

Text and graphics are saved simultaneously to any networked volume. Each page fed into the scanner goes to the first free board.

The result, according to Caere, is a system that can keep pace with desktop scanners and does not bog down if one board has to deal with a particularly complex page. Previous high-volume systems also use multiple processors, but in a sequential, not parallel, design that does not allow scanning of a new page until character recognition of the previous scan is completed, according to Larry Miller, Caere's vice president of marketing and sales.

The system runs under Microsoft Windows 2.1, which is preinstalled on the system, along with the Caere software. But documents can be saved in a variety of formats for both the Macintosh and the IBM PC, including Microsoft Word, WordPerfect, ASCII and compressed TIFF. Files can also be saved in Caere's OmniPage format.

Using Caere's AnyFont technology, the Parallel Reader recognizes text in sizes from 6 points to 72 points in portrait, landscape or columnar modes. Advanced features include two-sided page recognition, dot-matrix support, and automatic or interactive spell checking. Users processing forms can select from up to 26 zones on the page for recognition.

Based on a system Caere designed for the Securities and Exchange Commission, which Miller said processes 40 million pages of filings per year, the Parallel Reader is targeted at government agencies, law offices and companies in such fields as aerospace, banking, insurance and publishing.

The system is compatible with the Hewlett-Packard ScanJet Plus, MicroTek MS-II and Fujitsu M309x scanners. It works with all standard LANs, including AppleTalk, and can be used as a terminal with Unix, Posix, and most minicomputers and mainframes, Caere said.

The Parallel Reader is scheduled to ship at the end of this month. In contrast to other high-end recognition systems, which are typically sold through specialized value-added resellers, the Parallel Reader will be marketed through Caere's dealer network. The unit does not include monitor, keyboard, mouse, scanner or networking cards.

Caere Corp. is at 100 Cooper Court, Los Gatos, Calif. 95030; (408) 395-7000. □

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Silicon Beach speeds new SuperCard

Interface improved, debugger added

By Raines Cohen

San Diego — Hoping to beat Apple to the punch with a major upgrade to its stack software, Silicon Beach Software Inc. said it plans to ship SuperCard 1.5 next month.

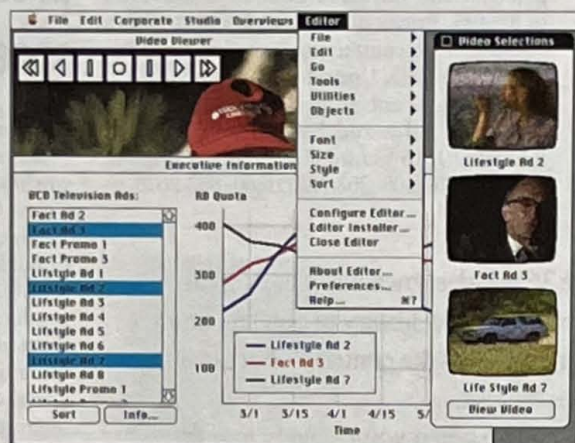
The new version of the multimedia authoring system, originally intended as a maintenance release, has become much more, according to Stuart Henigson, the company's strategic-marketing manager.

New features, developed mainly in response to user requests, according to Henigson, include improved performance, greater reliability, a revised runtime editor, interactive debugging tools, language additions and interface extensions.

The company said it has also enhanced MultiFinder compatibility, extended the range of possible animation operations, and added on-line help for the development and user environments.

The main interface enhancements in SuperCard 1.5 are color text, support for hierarchical and pop-up menus, and list fields. List fields behave much like the standard Open dialog box in most applications: Projects display lists of choices and let users select by clicking.

"The new version does a really good job of embracing the Mac-user interface," said Dean Wette, an independent developer in St. Louis. "Now you can have real scrolling lists, and there are language exten-



SuperCard 1.5 adds improved debugging and support for list fields, color text and hierarchical menus, as shown in this fictitious TV mogul's executive information system project. The selected menu shows the new runtime editor.

sions to handle them."

Most of the enhancements are of interest primarily to developers. A new miniapplication, Bridger, permits rapid switching under MultiFinder between the development environment, SuperEdit, and the user environment, SuperCard. The debugging module, ScriptTracer, shows messages and SuperTalk source code as user programs execute. It also displays expression and variable values and types. Scripts can respond to and attempt to recover from error conditions.

The upgrade is earning SuperCard a fresh look from stack developers who formerly scoffed at its low speed and awkwardness, in part because of Apple's delays in releasing HyperCard 2.0 to developers. Craig Ragland, founder of Interactive Design Inc. of Seattle, a hypermedia development company, said, "The main reason we went to SuperCard was because of delays in the developer release" of HyperCard 2.0. The new HyperCard is

slated for release in May but at press time had not yet shipped to beta-test sites.

Performance limitations still present in the new version of SuperCard continue to frustrate some seeded developers. "In a small, non-complex stack, it is considerably faster than HyperCard 1.2.5 for most operations," Ragland said. "But once you start getting a whole lot of objects in the project and on the screen, it starts slowing down again." Wette agreed. "I'm beginning to prefer SuperCard," he said, "but I wouldn't want to develop in it for a 68000-based machine like the Macintosh Plus or SE."

With Version 1.5, the suggested retail price of SuperCard will rise by \$100, to \$299, but registered users of Version 1.0 will receive free upgrades.

Silicon Beach Software Inc., now part of Seattle-based Aldus Corp., is located at 9770 Carroll Center Road, Suite J, San Diego, Calif. 92126; (619) 695-6956. □

Descartes puts business database records on map

By Henry Norr

Lyme, N.H. — Descartes, a business mapping program that promises "a breakthrough in ease of use, combined with power comparable to advanced minicomputer-based systems," will make its debut at next month's Macworld Expo.

Designed to help market researchers, advertising planners

and other business decision makers link demographic and economic data, the \$995 program integrates multilayer map views with a built-in relational database, according to its developer, Intermap Inc. Clicking on areas, lines or points on a map allows immediate access to records stored in the database, Intermap said. Built-in tools let users import information from databases and spreadsheets and query the data on the basis of field values, user-defined formulas, equal intervals or quantiles.

Jerry Lopes, director of market research at the Maryland Casualty Co. in Baltimore, said the program's developers have "a very good feel for what business users really need. The best thing about it,"

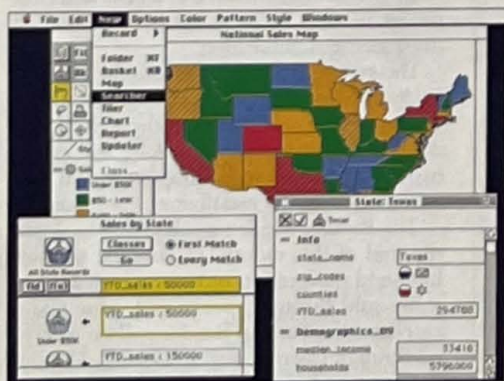
he said, "is that you can access data at any geographical level without fiddling around with boundary files."

The package, which is to be released this summer, will ship with state and county boundaries with current demographic data; ZIP code location information; and map data for major cities and interstate highways. The publisher will also offer Snap-In Data, a series of optional files containing geographic, demographic and economic data from leading information vendors.

Descartes' customizable maps can range in size up to 8 by 5 feet. The program supports zooming from the national level to a scale of 1 inch equal to every 6 feet.

The program was developed by Dwight Aspinwall, designer of Dartmouth College's on-line, video-linked Macintosh Training Seminars, and Jeffrey Doyle, a former remote sensing and mapping specialist for the U.S. Army Corps of Engineers.

Intermap Inc. is located at 13 Dartmouth College Highway, Lyme, N.H. 03748; (603) 795-4751. □



Descartes, Intermap's forthcoming business mapping application, integrates multilayer map views with information from a built-in relational database. Clicking on the map brings up the relevant data.

SAM 2.0 upgrade due out this week

By Henry Norr

Cupertino, Calif. — SAM 2.0, bolstered by an array of enhancements tailored to the needs of corporate micro managers, this week joins the battle against Mac viruses.

The first major upgrade to the popular Symantec Corp. utility adds a Virus Definition function that lets users update the program to combat future viruses (see MacWEEK, Feb. 27). To spread the word about the latest infections and antidotes, Symantec will sponsor a 24-hour Virus Newline.

Even more important for network administrators, said Keith Sproul, computer engineer with responsibility for more than 300 Macs at Union Carbide Corp. of Bound Brook, N.J., are the new version's security features.

"We needed some way to ensure absolutely that no one could run an infected floppy," he said. "The old version was very good about flagging viruses, but the warning it put up had a Continue button. A lot of users would just say 'Oh, OK' and click it."

The new release, he said, solves the problem by letting an administrator set the program so that floppy scans can't be canceled, floppy disks are always ejected, the Learn feature that allows permanent exceptions is disabled, and the launch of infected applications is always blocked.

The new version also lets managers lock and password-protect SAM configurations, customize warnings and transfer a list of permissible exceptions to other copies of the program. For use on a file server, the program can now be set to remove its own warnings after a specified interval, thus keeping the network from hanging up, and to record suspicious activities with a new Audit Trail logging feature.

The program also offers improved protection against Trojan horses and clones of existing viruses, as well as user-definable scan macros that can be launched with a keystroke.

SAM 2.0 keeps the original version's \$99.95 price tag. Upgrades are free to customers who bought any earlier version after Feb. 3 and \$29.95 to other owners. Upgrade information is available at (800) 626-8847 in California or (800) 441-7234 in other states. Symantec's upgrade subscription service has been discontinued.

Symantec Corp. is located at 10201 Torre Ave., Cupertino, Calif. 95014-2132; (408) 253-9600. □

For the Record

The phone numbers for Sybex Inc. given in the Feb. 27 MacInTouch column were incorrect. The correct numbers are (415) 523-8233 and (800) 227-2346.

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BPA

More Rave Reviews for the #1 SQL Database.

PC WEEK

Oracle for Mac Solves DBMS Puzzle SQL/HyperCard Combo Produces Sophisticated Applications

By Susan Janus

Database giant Oracle Corp., of Belmont, Calif., recently rounded out the list of platforms supported by the company's relational database-management system (DBMS) with the release of Oracle for Macintosh.

The new Mac DBMS teams the power of Oracle's Structured Query Language (SQL) with HyperCard's customizable and easy-to-use interface.

This combination allows Mac developers to create sophisticated applications that appear simple to users—a unique software-development opportunity unavailable on any other platform, including the PC, according to early corporate users we contacted.

In addition, users said, the network version of Oracle for the Mac allows the advantages of the HyperCard interface to serve as a front end to existing corporate relational databases residing on other platforms, such as mainframes and minicomputers.

Consequently, the Mac software has great potential for...

Oracle for Macintosh

DBMS Brings New Power and Face to Mac Application Development

WHAT CORPORATE BUYERS LIKE

- Offers SQL capabilities
- Uses HyperCard to mask complexity of database applications
- Serves as front end to relational databases on other platforms
- Can link different Oracle database platforms with network version
- Provides good documentation and support

oping database-management systems to connect departmental Macs to larger systems. Jeff Menz, a systems analyst for a scientific R and D organization, is currently using Oracle for Macintosh to develop a system that will give the company's numerous Mac users access to an Oracle database running on a VAX. Using the network version, Menz will link departmental AppleTalk networks to the VAX over a TCP/IP network.

Oracle Provides the Groundwork

The key benefit of Oracle's product is that "all the fundamental technical work—the protocols, the compatibility with the AppleTalk network—has been done by Oracle," Menz said. "I just have to build the HyperCard interface and do the database design work."

The result will be an Oracle relational database application on the VAX with a HyperCard front end that Mac users feel comfortable with, he explained. Also, the company will have one logical relational database instead of numerous fragmented local databases. This allows tighter security, improved data integrity and better performance, he added.

"ORACLE for Macintosh is a well-designed product... a programmer can, with just an hour's training, create a database on a host with a simple Macintosh interface in three minutes—honest." ★★★★★

MacUser, June 1989

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MacWeek, March 14, 1989

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MacGuide Magazine, June 1989

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¹Stand-alone version licensed for developers only. Requires Macintosh SE or II with 2 Megabytes of RAM, 5 Megabytes of hard disk space, floppy disk drive, and HyperCard 1.2. Includes 30-day installation support. ORACLE database, HyperSQL (HyperCard Interface), SQL+Plus, OCI and Pro*C (Macintosh Programmer's Workshop is required for programming usage), System Stacks and Example Stacks. Full networking version is \$999 and includes SQL+Net (for database communications), Async, 3270, DECnet, TCP/IP support, Alisa System's TSSnet, DECnet protocol and drivers and Kinetic's TCP/IP protocol and driver. Accessing database software on other machines requires a separate protocol handler and gateway software for the other machine. Call for additional information. Copyright ©1990 by Oracle Corporation. ORACLE is a registered trademark of Oracle. The other companies mentioned own numerous trademarks. TRBA.

Fonts

From Page 1

not unexpected, it ended speculation lingering since September. At that time, Apple said it would provide its outline-font technology to Microsoft in exchange for that company's PostScript clone.

In stark contrast to his mood last fall, a jubilant John Warnock addressed the conference.

"It's been a long six months since the last seminar," admitted Warnock, Adobe president and CEO. "In September we said we would open up Type 1 fonts. Now the Type 1 specifications are published." He held up a copy of the specs, available now from Adobe.

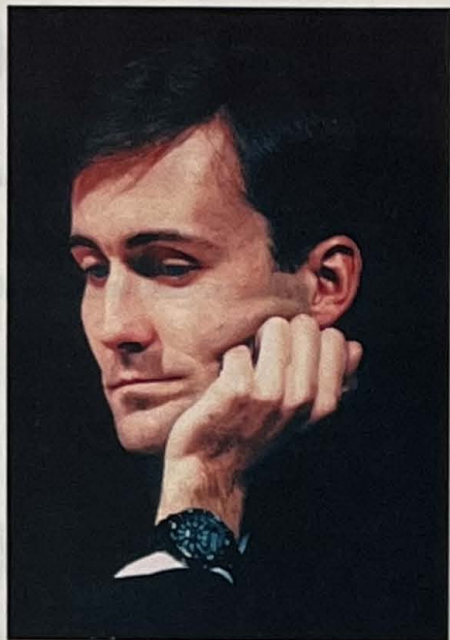
The Apple-Microsoft team made its own announcements: As expected, TrueType will ship with System 7.0 for the Macintosh and with Microsoft Windows this year.

"We will make sure Adobe SAA fonts are available to our Windows customers," said Steven Ballmer, vice president of Microsoft's systems-software group.

Printers with TrueImage, the new name for Microsoft's PostScript, will ship in 1990, Microsoft said. TrueImage interpreters will be capable of printing both TrueType and Type 1 fonts, according to Cal Bauer, general manager of Microsoft's printer business unit.

Industry pundits said IBM's decision cleared the smoke clouding the issue of standards. Paul Brainerd, CEO of Aldus Corp., said users should experience less confusion since they will be able to choose between two stated standards.

Jonathan Seybold, conference sponsor and panel-discussion mod-



Jim Gable, Apple's TrueType product manager, ponders the news that IBM has endorsed Adobe's font technology.

erator, agreed. "The real win is for users. One way or another, you'll be able to use the same technologies with Macs or PCs."

Others were more skeptical. Noting that no TrueType screen technology, fonts and output devices are available yet, Frank Romano, editor of TypeWorld magazine, said, "I think we have the first stealth standard."

Some users were troubled by compatibility questions. "It's important that we have integrated systems that communicate, so two different font standards bother me," said Harry Holtt, manager of communications at McDonnell Doug-

las Corp. in St. Louis.

"Apple has a huge base of Type 1 fonts out, and now they have to get users to convert to TrueType," said Lee Frantz, a senior engineer at Dow Jones & Co. in New York, which has decided to stick with Adobe. "I think that will be difficult."

While the principal parties have returned to the war room to plot the next offensive, other vendors have entered the fray. A number of announcements centered on Hewlett-Packard's LaserJet III printer and its PCL 5 page-description language.

The new printer uses Agfa Compugraphic's Intellifont scaling technology as its resident system. Bitstream Inc. said it is developing a utility that will also give LaserJet III

users access to fonts in its format, and Microsoft said it will develop a TrueType cartridge for the LaserJet III similar to the Adobe PostScript cartridge for HP LaserJet printers.

According to Seybold, the next key font decision lies with Sun Microsystems Inc., which has its own technology, Folio. "People have been courting Sun like mad since last September," he said. Perhaps pointing to a future direction, Agfa Compugraphic announced that, under license from Adobe, it is porting Adobe Type Manager technology to the NeWS Window system running on Sun's SPARC workstations. □

Gassée: 'It became clear to me that I needed to strike out on my own'

By Daniel Farber

Cupertino, Calif. — After a nine-year stint as one of Apple's most visible and vital executives, Jean-Louis Gassée soon will be turning in his company badge and embarking on a new and as-yet-uncharted journey.

In a letter to Apple employees following his resignation last week, Gassée wrote, "I have spent with you the best years of my professional life, and I am in your debt for the learning experience, the exhilaration, the fun of meeting together the challenges of competing in this turbulent industry."

Gassée, 46 last week, joined Apple in 1981 as the founding general manager for Apple France. While in charge of developing new products and advanced technologies over the past five years, he was responsible for the introduction of the open-architecture, modular Mac II line.

In an interview last week with MacWEEK, Gassée talked about his departure from Apple and his plans for the future.

On his resignation. "For a long time I have been asking myself where I want to be in five years. Creatively, my impulses have been frustrated.

"After a while you realize that large organizations develop habits, and it's not always easy to do something different. I have dreamed that we could better integrate technology and the customer side of our work.

"Early this year, I had dinner with four French people who work in Silicon Valley, including Bernard Lacroute and Philippe Kahn. I saw them happily yakking about what they are doing, and it became clear to me that I needed to strike out on my own."

On innovation at Apple.

"Apple has very innovative views of personal computers and is engaged in a lot of research that will make its way into products in due time. In the meantime we should not get confused by the PR of companies that claim that giving a button a different shape constitutes innovation.

"True innovation takes a long time to hatch. Some day Apple will be viewed as a company with a patient, persistent quality."

On the lack of lower-cost Macs.

"Doing lower-cost products is one thing Apple has to do. Analysts attribute our slower growth in the United States to a lack of lower-cost machines. But if you look at the [sales] performance in Europe compared with the United States, you'll find that they had no problem selling our existing product line. They just took a different marketing approach."

On high points during his tenure at Apple.

"The highs in this job can be very private, such as going into the labs and seeing art — the work of engineers — or attending a product introduction when the auditorium goes dark and video starts running and you realize it's really happening."

On his future.

"Business is an art, and I have the inclination to make all the dedicated parts — technology, marketing, sales and distribution — of the machinery work together. Right now I have too many ideas, and I need to go through a weeding-out process.

"And I am working on a book, which has a core argument that the personal computer is bound to become the most important intellectual tool to mankind."

Mac IIx

From Page 1

show the IIx holding its own in both price and power against such high-end machines as the Sun SPARCstation 1, the Compaq Deskpro 386/33 and the IBM PS/2 Model 70 (see chart, Page 1).



To win over potential customers from such alternatives, however, Apple will have to confront longstanding deficiencies in its channel and support network, analysts said.

The documents clearly outline the market that Apple plans to target: "The IIx provides the performance and functionality which will allow many 'power users' to consider Macintosh for the first time."

The documents continue: "The combination of the IIx and A/UX 2.0 [Apple's next version of Unix — also slated for introduction next week] provides an alternative for many people whose only previous choice had been a Unix workstation."

The pricing and performance of the IIx indeed appear to rival well-known competitors. Using government pricing, for example, a \$12,045 IIx with 4 Mbytes of RAM and a

160-Mbyte hard disk would discount to about \$7,700 on this year's General Services Administration (GSA) schedule. A \$14,496 Compaq Deskpro 386/33 with 2 Mbytes of RAM and an 84-Mbyte hard disk is selling for \$7,560 on the current GSA schedule of one government reseller contacted by MacWEEK.

In parts of the corporate market, of course, Apple's competition includes not only high-price vendors like Compaq but also dozens of vendors offering powerful but far less-expensive machines. A \$12,000 Mac IIx may look inexpensive to a prospective buyer of a \$15,000 Compaq but not to someone considering an off-brand 25-MHz 80386-based machine priced at less than \$3,000.

Against Unix- and OS/2-based systems, which still have limited software support, Apple will be touting an important advantage: the "huge base of productivity software" already available for the Macintosh. A/UX 2.0 will make it far easier for users to tap the Mac's software base from Unix systems.

But that alone won't resolve the doubts of some high-end buyers. "The IIx looks great, but [Apple] has a lot of work to do to give it appeal," said a manager at a major Northwestern aerospace company,

"Unix administrators are afraid of having to support a whole new box and set of applications."

Analysts agree, citing Apple's previous marketing and support failures as a major issue. "Apple's difficulty finding acceptance in the CAD market in 1989 was due primarily to marketing and sales channel issues," said Bruce Jenkins, vice president of Daratech Inc., a Cambridge, Mass.-based CAD/CAM market research company. "These are the areas in which a great deal of work will have to be done, no matter what technology they bring to market."

"In terms of the high end, Apple has to beef up the channels," said Abigail Christopher, an analyst at International Data Corp. in Framingham, Mass. "They'll have to win over some of the high-end resellers who are now selling Intel-based machines for compute-intensive applications such as CAD."

According to numbers from San Jose, Calif.-based market research firm Dataquest Inc. quoted in the Apple documents, sales of high-end PCs and low-end workstations are expected to grow by 55 percent to 60 percent in the early 1990s. If Apple can reach the right people with the right message and support, the IIx can help Apple capture a significant share of this burgeoning market. □

Apple

From Page 1

visionary and product-oriented person at Apple. His role was in motivating his people and in focusing Apple's product-development effort," said Ash Jain, publisher of the Macintosh Market Report in Irvine, Calif. "The question is whether Gassée's departure will have a detrimental impact on people who were inspired by him."

"[Jean-Louis] was a misfit on Apple's executive staff," said Steve Sakoman, who resigned this month as director of special projects under Gassée. "He understands the business and he loves it. He is approachable. He was always the customer's advocate."

Sakoman served as director of CPU engineering during the development of the Mac II, SE and the Apple IIGS, among other products.

Other senior engineers associated with Gassée are also have resigned recently.

Some analysts questioned whether Sculley will be able to direct Apple's product-development efforts successfully and still attend to his duties as CEO. "If he gets good counsel from his senior technical staff and spends some time in the labs, he'll manage," Seto said. "But ultimately, he's got to find someone to take on that responsibility."

Notwithstanding the management shakeups and public airing of internal problems, Apple's fortunes on Wall Street are starting to perk up. The company's shares closed last Thursday at \$36.75, up some 15 percent over the low earlier this year.

"New product introductions and the one-year warranty should provide an emotional lift that will boost morale," Jain said. □

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Warranty

nologies, in a prepared statement last week.

The new warranty coverage is global in scope; products purchased in the United States can now be serviced in more than 80 countries. Users must still pay for out-of-the-country warranty repairs, but Apple USA will now reimburse customers for repairs made by any Apple-authorized service center.

The AppleCare promotion, which runs from March 19 to May 31, 1990, offers users

who buy six months of coverage an additional six months free. A year's coverage for a Mac IIcx with an Apple internal 40-Mbyte hard disk and color monitor, for example, is now \$246. Apple also is offering volume discounts on AppleCare of up to 25 percent.

All Apple systems made since 1978 and purchased in the United States qualify for the promotion; some dealers will charge an inspection fee of about \$50 to begin coverage on out-of-warranty equipment.

"Over time, things come to the top of the

Apple priority list. We've just seen warranty rise to the top," said Bob McNinch, product marketing manager for Customer Service.

"You won't see us using [warranty] as a major selling point," he said, "but we think that by putting this in and not raising prices, we're increasing the value of our products."

Dealer reaction to the new warranty program was positive.

"Dealers stand to benefit," said Dan Neesley, founder of North Shore Computers Inc. of Milwaukee. "Even if they can't sell

their own service contracts as much ... customers will tend to bring in their machine for repair of minor problems more often if the warranty is there. Dealers do get paid by Apple to perform warranty service."

Coincidentally, NeXT Inc. last week also extended the 90-day warranty covering its workstation to one year. "Our customers made it clear that a one-year warranty was important to them, and we are happy to oblige," said Todd Rulon-Miller, vice president of sales for the Redwood City, Calif., developer. □

Pre-press

From Page 1

between the Mac and their high-end systems (see MacWEEK, March 6).

Products such as Barneyscan Corp.'s Color Imaging System family of hardware and software imaging tools and Optronics' new Color-Getter, a 2,000-dpi tabletop color-drum scanner retailing for \$70,000, had many users convinced that pre-press on the Mac had arrived.

The show "verified that the Mac is the most viable solution for us," said Louis Brazil, composition supervisor at Cal Central Press, a commercial printer and service bureau in Sacramento, Calif. The company, which was trying to decide between traditional and desktop solutions, decided to go with the Mac after seeing the products that were presented at the show.

Like other users, Brazil identified the lack of professional-quality input and output devices as the Mac's stumbling blocks. Optronics' ColorGetter for input and its ColorSetter imagesetter for output convinced him, however, "that those barriers are breaking down."

Some users noted that several obstacles remain. While it is now possible to do color separations from the Mac, it will be at least two years before desktop systems have the speed and reliability required for professional-quality, high-volume work, said Ray Hammond, president of The Last Word, a London-based publishing systems integrator. Scanning and output speeds remain major issues, he said.

Philippe Silvy, sales manager for the technical division of Agence France-Presse, cited compression as a crucial issue. "C-Cube's chip that compresses and decompresses on the fly will help us move pictures more quickly," he said (see MacWEEK, Feb. 20).

User expertise — or lack thereof — is another impediment, said Jayne Gould, a consultant at The Last Word. "The Mac seduces people into thinking they can do things they can't," she said. "Listening to some Mac users discussing color is like listening to virgins discussing sex — they think it's all just a matter of turning some knobs."

"Color technology is coming around," said Mike Templeman, Fellow at Aldus Corp. of Seattle. "But users must be aware of the pitfalls. You can't just hook it up and go. It's not plug-and-play yet."

Geeter Kyrakis, owner of All Systems Color, a Dayton, Ohio-based all-Mac service bureau, said the key is to hire color experts who can then be trained quickly because of the Mac's ease of use.

"We're talking about months, not years, to get up to speed on desktop systems," said Sparky Campanella, director of product marketing for Alameda, Calif.-based Barneyscan. "We're putting as much intelligence as possible in our systems to reduce the learning curve."

Educating vertical markets about desktop technology is another issue, Kyrakis said. "We have to sell the traditional printers on this unconventional process." □

Cliff Lehman contributed to this report.

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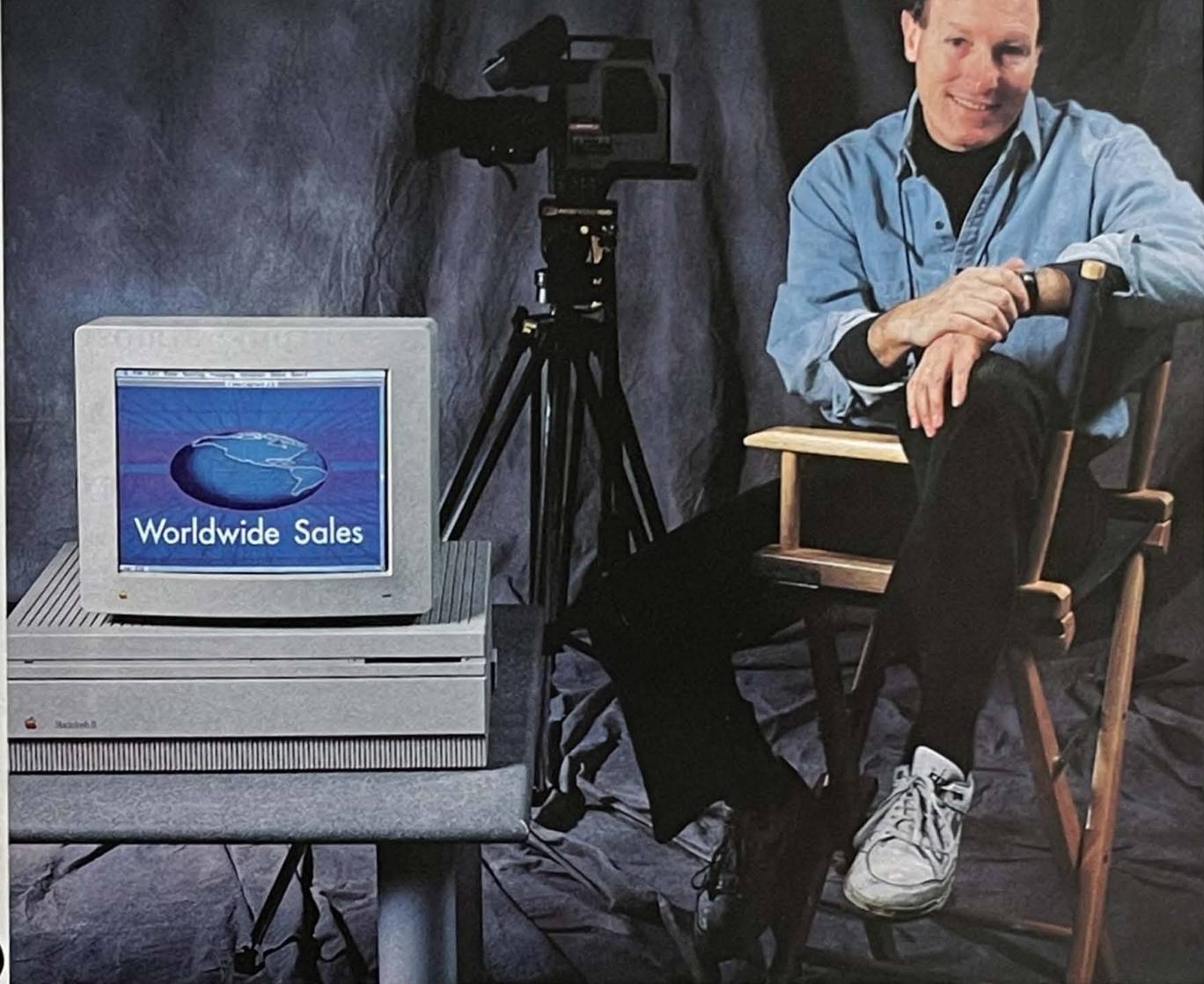
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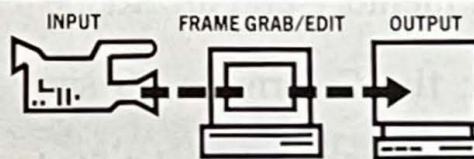


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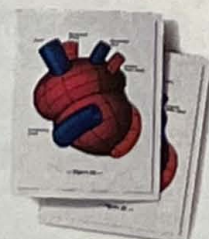
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*The new way:
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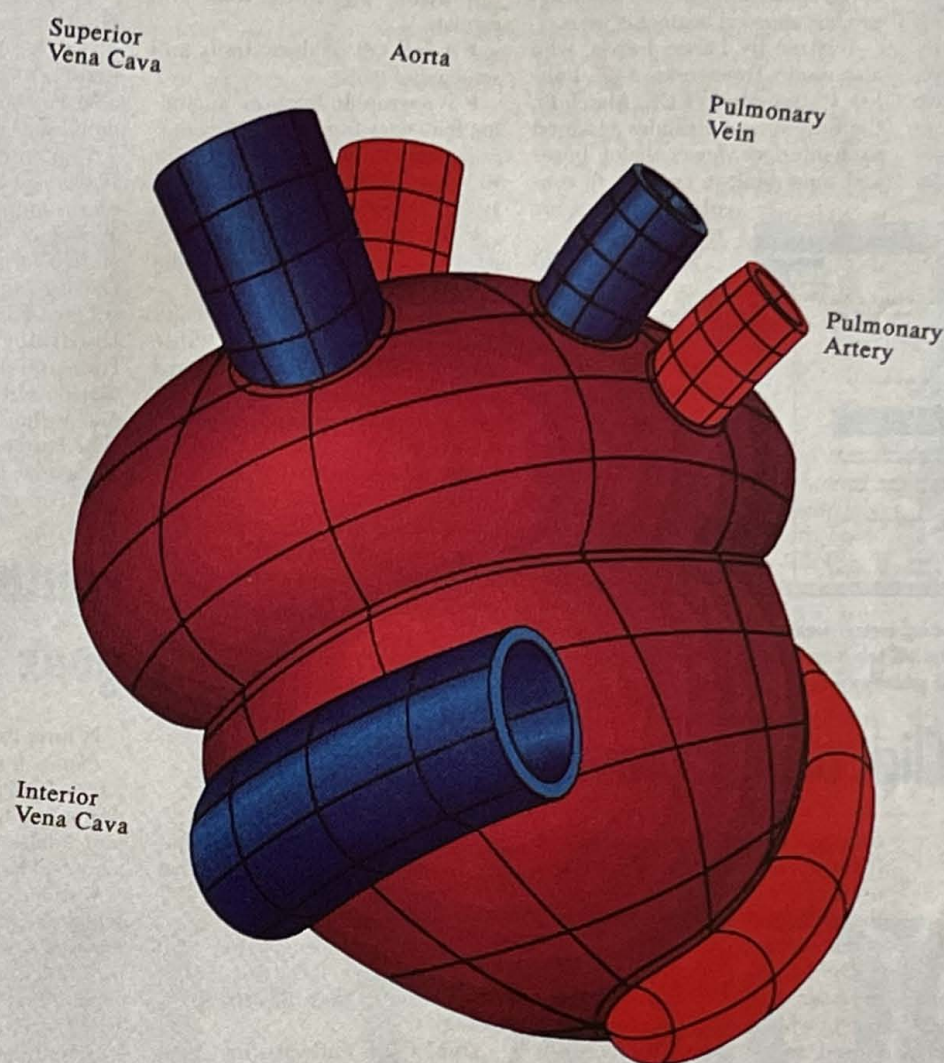
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den change of heart.



— Figure 36 —



— Figure 36 —

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WE'RE MAKING THINGS BETTER FOR YOU.

Timeworks to make Publish It! Easy

Low-cost package offers graphics tools

By Carolyn Said

Deerfield, Ill. — Aldus Corp., Letraset and Quark Inc. may have sewed up the high end of the desktop publishing market, but Timeworks Inc. hopes there is still room

at the entry level. Publish It! Easy, the company's latest product, packs page-layout, word processing and graphics features into a \$199.95 product aimed at beginning users.

Written by Lance Lewis, who also wrote Timeworks' \$495 Publish It! (see MacWEEK, March 6), the Easy version includes a layered user interface, fewer dialog boxes and some built-in controls to simplify learning for new users.

Scheduled to ship at the end of this month, Publish It! Easy offers:

- ▶ An on-screen Library that acts as a floating, context-sensitive menu. For example, it displays alignment for draw objects or fonts and sizes for text. The Library menu also lets users Undo any of their five most recent text edits on any story.

- ▶ Word processing features, including spell checking, a thesaurus, and a search-and-replace operation for both text and format.

- ▶ A full set of draw tools and some paint tools.

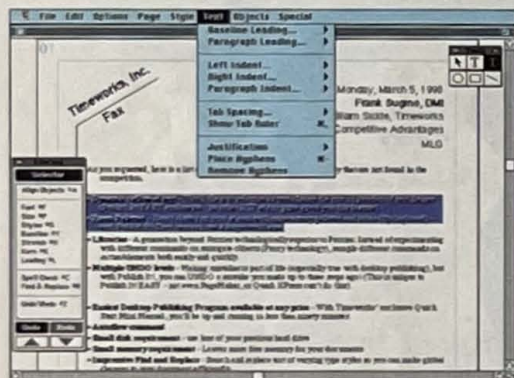
- ▶ Typographic features, including font sizes from 1 to 127 points, horizontal scaling from 25 percent to 400 percent and kerning in 1-point increments.

- ▶ Full rotation of text and graphics, grouping, and the ability to flip objects.

Other features include spot color for graphics and text; editable thumbnails; a global pasteboard metaphor; cursor navigation between story frames; and automatic runaround.

Like Silicon Beach Software Inc.'s forthcoming \$299 Personal Press, which Timeworks is targeting as a prime competitor, Publish It! Easy has a Proxy feature, offering on-screen previews of edits.

Timeworks Inc. is located at 444 Lake Cook Road, Deerfield, Ill. 60015; (708) 948-9200. □



Timeworks' Publish It! Easy features a floating, context-sensitive menu, an innovation that the company hopes will help it carve out a market as a full-featured but easy-to-use publishing package.

Eastgate, Dubl-Click utilities present fonts à la carte

Fontina, MenuFonts ease type selection

By Henry Norr

Cambridge, Mass. — Font fanciers now can choose between two new ways to manage their increasingly cumbersome Font menus on-screen.

▶ Eastgate Systems Inc. last week began shipping Fontina, a \$69.95 utility that replaces the conventional scrolling menu with a multicolumn menu that can display scores of font names at a glance. A Control Panel device (cdev) lets users select the screen font that will be used to display font names.

Fontina also simplifies the menu by grouping variants of the same font together, minus the "N," "B" and other codes that make alphabetical listing confusing. In programs that require the conventional font sequence — notably Microsoft Word — menu rearrangement is automatically disabled, Eastgate said, although Fontina's other features remain available.

An office package with 10 copies of Fontina is priced at \$295. The software is backed by an unconditional 30-day warranty, the company said.

▶ Dubl-Click Software Inc. has taken over distribution of MenuFonts, an earlier Font-menu enhancer, and upgraded the program to Version 3.0. Previously distributed by the now-defunct Beyond Inc., MenuFonts displays each font in its

own typeface in the Font menu. A feature called KeyScroll also lets users select a font by pulling down the menu and typing the first letter of the font name.

Dubl-Click's new version gives the user control over the font and size in which each font name is displayed, so that non-Latin fonts can be listed in a readable form and all fonts can be shown at an optimal size. A FontShow bar added to the menu lets users pop up a display of any font in 9- to 24-point sizes.

The new release also delivers a threefold performance improvement, sparing users the delays caused by the Font-menu enhancement options of Claris Corp.'s MacWrite II and Fifth Generation Systems Inc.'s Suitcase II.

Priced at \$59.95, MenuFonts 3.0 ships with a new

version of FastFormatter, a high-speed floppy-formatting utility that has been updated to support 1.4-Mbyte high-density disks.

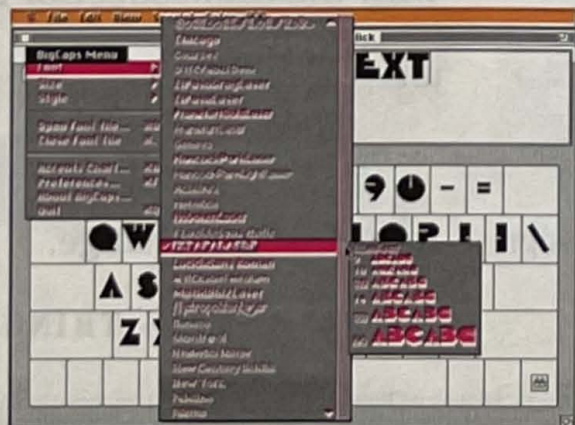
Eastgate Systems Inc. can be reached at P.O. Box 1307, Cambridge, Mass. 02238; (617) 924-9044.

Dubl-Click Software Inc. is at 9316 Deering Ave., Chatsworth, Calif. 91311; (818) 700-9525. □



Fontina, a new Startup document from Eastgate Systems, replaces the standard scrolling font menu with a multipanel menu that can display dozens of font names at once.

Version 3.0 of MenuFonts, recently acquired by Dubl-Click Software, displays font names in user-specified fonts and sizes. The enhanced menu is shown here in use with the company's BigCaps desk accessory.



Altsys' Metamorphosis converts PostScript fonts to editable outlines

By Pamela Pfiffner

Plano, Texas — Altsys Corp. last month began shipping Metamorphosis, a \$295 utility that converts printer-resident and downloadable PostScript fonts into editable outlines.

Working with any Adobe PostScript interpreter, Metamorphosis automatically converts any Type 1 or Type 3 font into three outline formats: the Fontographer Database format, for use with Altsys' font-editing application; Adobe Illustrator 1.1 Encapsulated PostScript (EPS) format, for manipulation with Aldus Freehand or Adobe Illustrator; or the Fontographer PostScript format, which creates a downloadable font.

At Treacyfaces Inc., a type-

design house in Ardmore, Pa., President Joe Treacy has been using a beta version of Metamorphosis to convert Type 1 fonts to Type 3, as well as to transform fonts into EPS files for design work.

"Metamorphosis gives you immediate access to the letterforms, right up to the manipulation of the outline," Treacy said. "It lets you get a quick start on designing logos." He lauded the program's simple interface and smooth performance.

Treacy said, however, that Metamorphosis' inability to convert typefaces into the Type 1 format was a drawback.

"The best thing about it is that it can create Fontographer-format fonts from Type 1 fonts. But for the money, I'd like it to convert Type 3 fonts into the Type 1 format," agreed Jim Schmal, owner of JS Communications, a San Diego-based graphic design and writing company.

Metamorphosis is compatible with any PostScript typeface, including those by Adobe Systems Inc., Bitstream Inc., Linotype Co. and The Font Company, Altsys said. It requires a printer with an Adobe PostScript interpreter.

While the forthcoming version of Fontographer, 3.1, also will allow users to edit downloadable Type 1 fonts (see story, at left), Metamorphosis will remain useful for editing printer-resident fonts, Fontographer Type 3 fonts and any unusual PostScript fonts, Altsys said. A future upgrade to Metamorphosis will allow users to convert any font that can be downloaded to an Adobe PostScript raster-image processor into Apple's TrueType format.

Altsys Corp. is located at 720 Avenue F, Suite 109, Plano, Texas 75074; (214) 424-4888. □

Abaton cuts prices on scanner products

Fremont, Calif. — Everex Systems Inc.'s Abaton subsidiary last month slashed prices on three gray-scale scanner products. The company's Scan 300/GS, a 256-level scanner, will list for \$1,595, down \$200. The price of the 16-level Scan 300/S is \$1,195, down \$300.

The company also said its 8-Bit Scanner Upgrade, a replacement controller board that brings 256-level gray-scale capabilities to the Apple Scanner as well as to the Scan 300/S, dropped from \$695 to \$595.

Abaton is located at 48431 Milmont Drive, Fremont, Calif. 94538; (415) 683-2226. □

Fontographer goes Type 1

By Henry Norr

Plano, Texas — Fontographer 3, Altsys Corp.'s PostScript font-design application, will soon support Adobe Type 1 fonts, the company said last week.

Version 3.1 of the \$495 program, scheduled to ship within the next few weeks, according to the company, will let users save newly created or modified fonts and logos in the Type 1 format, complete with hinting for improved resolution on relatively low-resolution output devices. Fonts output in Type 1 from Fontographer will be fully compatible with Adobe Type Manager, Altsys said.

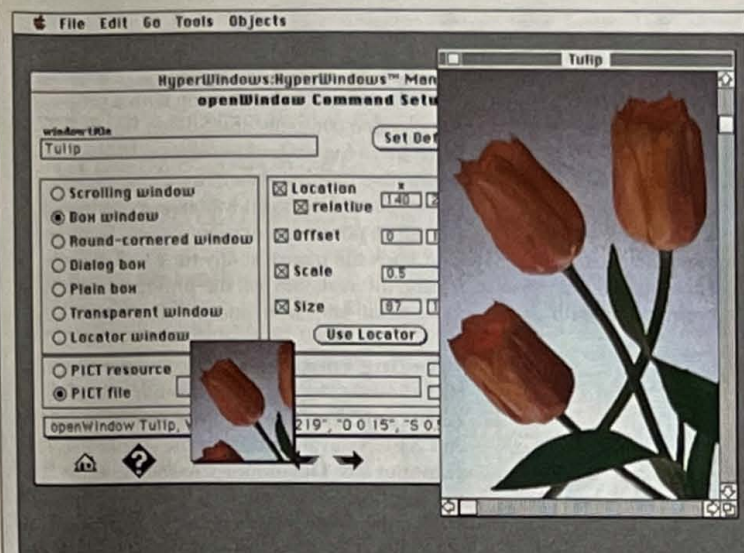
Like Metamorphosis (see story, above), Fontographer 3.1 will transform downloadable Type 1 fonts from Adobe and other vendors into editable outline fonts. Previously, Fontographer could output only Type 3 PostScript fonts. Adobe Systems Inc. developed the Type 1 format for its own use and made the format specifications public only last week.

Other enhancements in Fontographer 3.1 include support for Encapsulated PostScript, which will allow users of Aldus FreeHand and Adobe Illustrator 88 to paste their designs directly into Fontographer, and the capability to output Type 1 and Type 3 fonts in a form that can be used on IBM PCs and compatibles.

In the future, Altsys President Jim Von Ehr said, the company also will add support for Apple's TrueType (formerly Royal) format.

Fontographer 3.1 will be free to users buying Version 3.0 after March 1, \$30 for other 3.0 owners and \$100 for owners of earlier versions.

Altsys Corp. is at 720 Avenue F, Suite 109, Plano, Texas 75074; (214) 424-4888. □



HyperWindows 1.2, Tulip Software's enhanced external-command set for HyperCard, has scaling, cropping and a variety of dynamic effects for the color windows developers can add to stacks.

Color blooms in HyperWindows

Andover, Mass. — Tulip Software's HyperWindows external-commands package may not let a hundred flowers bloom in HyperCard, but it will display up to 16 color windows from your stacks. Version 1.2, an upgrade that shipped last month, gives script writers a variety of new options, such as scaling, cropping and improved color control.

Scripts can now move the windows, change their contents or produce a scrolling effect. The amount of memory space required for the set has been reduced to 25 Kbytes.

HyperWindows 1.2 sells for \$59. Upgrades are priced at \$20.

Tulip Software can be reached at P.O. Box 3046, Andover, Mass. 01810; (508) 475-8711. □

Touting 'ethernet,' Farallon ships Ethernet connectors

By John Battelle

Emeryville, Calif. — Farallon Computing Inc. this month began shipping its line of Ethernet-over-twisted-pair network connectors and controllers.

The new series consists of the PhoneNET StarController EN, a \$2,495 hub that manages up to 12 Ethernet nodes, and the StarConnector EN, a small external connector, priced at \$195, that links each node to the Ethernet.

The StarController EN, which is compatible with Farallon's LocalTalk-based StarController, ships with StarCommand 2.0, an updated network-software package that monitors AppleTalk and Ethernet networks. The StarController EN provides a thick Ethernet port for management and bridging.

Touting its "ethernet" strategy, Farallon said its star-topology PhoneNET system now offers "the only consistent wiring and network-management solution that allows the user to choose between LocalTalk and Ethernet," depending on the performance required.

Farallon said its controller is

compatible with EtherPort L networking cards marketed by Novell Inc.'s Kinetics division. The cards, priced at \$595 for Mac IIs and \$645 for the SE, have a twisted-pair port on board and thus do not require a StarConnector EN. Other Ethernet cards with a twisted-pair port, such as the new MacConnect-10BT from Racal Interlan of Boxborough, Mass., are also plug-compatible. Other Ethernet cards and network devices such as Novell's Kinetics FastPath need a StarConnector EN.

With the emergence of the 10BASE T standard, the Ethernet-over-twisted-pair market is heating up. Sunnyvale, Calif.-based David Systems last month announced the VolksNet Hub, a \$99.95-per-port controller for such networks. David also offers Expressnet, a 10BASE T solution that includes extensive network-management features. Other vendors, including Sausalito, Calif.-based Nuvotech, plan to deliver comparable products by midyear.

Farallon Computing Inc. is at 2000 Powell St., Suite 600, Emeryville, Calif. 94608; (415) 596-9100. □

Farallon gives Mac wake-up call

Farallon this month began shipping Remote/WakeUp, a Mac-to-modem cable that lets users turn on a Mac II-family machine with a phone call.

The \$49.95 cable provides hardware flow control, enabling any Mac to take advantage of the advanced data-compression capabilities of high-performance modems. But its unique feature is an extra connector that plugs into the Apple Desktop Bus and powers up a Mac II whenever the modem's phone line rings.

To keep the Mac from being left on after a wrong-number call, software included with the Remote/WakeUp cable automatically shuts down the computer after an interval specified in the Control Panel.

Farallon offers the cable as part of its \$1,295 Timbuktu/Remote Access Pack, which includes a copy of the Timbuktu/Remote screen-sharing and file transfer utility and the company's 9,600-bps Remote/V.32 modem. — By Henry Norr

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StackWEEK STEVE MICHEL

Toolkits to control video through HyperCard

ISSUES & TRENDS

Videodisc technology, as Steve Rosenthal discussed in his New Media column in the Feb. 27 issue of MacWEEK, "works, is here

now, and has an established distribution network." Furthermore, good toolkits exist that let you control a videodisc player from HyperCard. You can buy existing discs and add your own front end or work with

a video developer to create new discs.

Videodisc players are not that expensive. The catalog of Santa Monica, Calif.-based The Voyager Co. lists the fine Pioneer LVP 4200 at \$995 and the LVP 2200 at \$750. Individual discs, including movies such as "Citizen Kane," collections of space-satellite images and art gallery tours, start at about \$40.

Recently I've been experimenting with

videodisc technology, working with a professional video company and Silicon Beach Software Inc.'s SuperCard to create a 16-disc interactive training system for a coal-generated power plant. Users can watch an overview of the entire power-generation process from one disc, click the mouse at any time to flag areas of special interest, and ask the program to get more detail later from another disc.

Macintosh Training That Works

"I have been using FileMaker for about a year now and decided to get the MacAcademy tape to see how the program was presented, the content, and to see if other tapes would be useful. After looking at the tape I promptly ordered three more! Needless to say I was pleased, as the tapes are professionally done and most useful. You and your company do a fine job." Mr. James H. Patterson, M.D.

DAYTONA BEACH, FL- "There's got to be a faster, easier, and less expensive way!" This statement sums up the frustration that Randy Smith felt three years ago as he tried to find training for the Macintosh computer.

That frustration led to the creation of MacAcademy, now the nation's leading Macintosh training program, and the recent introduction of the country's first complete Macintosh Video Training Series. MacAcademy teaches over 18,000 people each year in 65 major metro areas. The program is proud of the fact that both beginning and advanced Macintosh users, from over 12,000 companies large and small, have found MacAcademy's live workshops to be an excellent, low priced training solution.

In order to offer additional training, MacAcademy's next step was to put each of their dynamic training workshops on video. (And to offer an additional dozen training videos for programs not even offered at MacAcademy.)

Now you may choose from over 26 different, 2-hour, VHS MacAcademy Videos for only \$49 each. A complete list of programs can be found in the coupon below.

MacAcademy Video Training tapes offer tremendous advantages for today's Macintosh user. When using the videos you actually see the steps take place on a Macintosh screen. A small inset will show you the instructor and the mouse or keyboard. The instructors featured on the videos are MacAcademy's top rated teachers who have trained employees of all but two of the USA's Fortune 500 companies and who have each received a consistent rating of *excellent*.

Training videos offer the valuable advantage of building a learning and reference library. If you ever want to brush up on a technique, simply go back to the video and review the technique demonstrated. If you hire a new employee, simply have them review the video for the program they'll be using. Videos offer the unique flexibility of teaching both individuals or hundreds of people at one sitting.

In addition to a super \$49 price, the videos also carry a 30-day satisfaction guarantee. If you're not totally satisfied, simply send the tape back for a full refund.

MacAcademy will continue offering the nation's highest rated live training courses in major cities. But in addition, you may also build your Macintosh training library.

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Taking control. A videodisc player can be connected to the Mac through one of its serial ports. You can then use sets of XCMDs and XFCNs available from the Apple Programmer's & Developer's Association or Voyager to send commands to the video player. Besides letting developers create new videodisc products, the HyperCard toolkits allow educators and others to tailor canned videodiscs for their own purposes.

Between the two sets of XCMDs, I prefer the Voyager tools: They work in either HyperCard or SuperCard and are somewhat easier to use than the APDA set. Otherwise, the functionality is nearly the same.

One of the nicest features about videodiscs is that you can access specific frames. For those familiar only with VCR decks, which generally have trouble freezing frames, this is a breakthrough. You can tell the video player to display a specific frame (each frame number is encoded on the disc) or to play a sequence running from one frame to another.

Each side of a disc holds up to 54,000 frames of either moving or still images, and any frame can be accessed very quickly, which is another capability conventional VCRs lack. Furthermore, a set of frames can be encoded as a chapter and played as a group.

Not perfect. As always after working with some products for a while, I've found some additional features I would like.

First, neither the Apple nor the Voyager toolkit provides a way for a script to determine the name of the disc currently in the player. Most of the time that's not a problem, but it can be when a stack is managing a complex set of discs. If you want to be playing Chapter 7 of Side A of Disc 3, and Disc 2 is inserted, things could get seriously out of whack.

It also would be nice if there were some way of asking the disc for a table of contents. While working with a disc full of thousands of images of the earth taken from the Land-Sat system, I had to constantly refer to a printed list of frame numbers.

Although it's probably not possible, it would be convenient to have the player initiate some of the interaction with the computer. Presently, all interactions are started by the computer, which sends a message to the player and gets a result back. Sometimes you want the player to play a sequence and tell the computer when it is done. Now the Mac must constantly poll the video player to discover its status. This isn't much trouble, but something more automated would be nice.

These caveats aside, videodisc technology, while not new, certainly is exciting. Once you get the player, the costs are not high if you are using prepackaged discs, and the educational and presentation benefits can be large. □

If you have any tips or other HyperCard-related information, write to StackWEEK, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. Electronic mail: MCI: STACKWEEK; AppleLink: D1507; Connect: MICHEL.

CompuServe in line for makeover

Entry-level package, Navigator 3.0 due

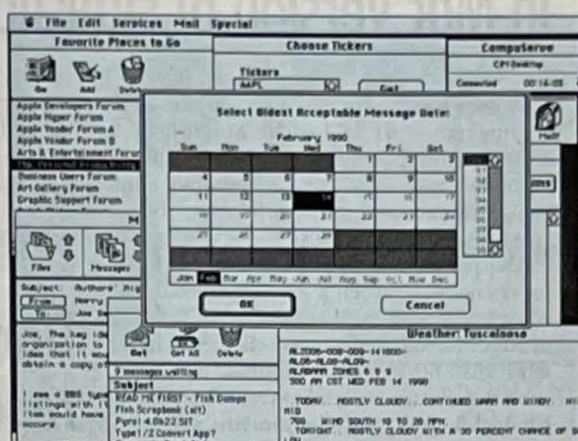
By Nathalie Welch and Henry Norr

Columbus, Ohio — Faced with mounting competition from on-line services with easy-to-use graphical interfaces, CompuServe will soon get a new look — in fact, two new looks.

► A long-overdue upgrade to Navigator, a favorite telecommunications tool of Macintosh users who patronize the service frequently, is now expected in April or May, according to a CompuServe Inc. spokesman.

► A Mac version of the CompuServe Information Manager (CIM), an entry-level graphical package already available for the IBM PC, is due by "early summer."

Enhancements in Version 3.0 of Navigator, originally scheduled to ship a year ago, include an integrated address book; automatic uploading and downloading of binary files sent through EasyPlex (soon to be renamed CompuServe Mail); retrieval of entire threads, or of the "parent" of a specified message,



One feature of CompuServe Information Manager for the Mac, currently under testing, is an on-screen calendar that lets users specify the date of the oldest messages they want the program to retrieve.

from the service's message bases; and automatic creation of a list of files posted to a forum since the user's last visit.

While Navigator is designed for CompuServe regulars, CIM is intended for novice or occasional users. Navigator, which was originally developed as shareware, is designed to minimize on-line time by running automated sessions that the user prepares and reviews off-line. CIM is primarily oriented toward making it easier for users to interact on-line with the system, although it will allow off-line

preparation and review of electronic messages.

CIM features multiple windows that open simultaneously, allowing the user to jump between sections of the service with a mouse click; icons and buttons for commands and navigation; a built-in text editor and address book; graphical "maps" of message threads; and a personal menu for "favorite places" within the service.

The first release of CIM for the Mac, however, will not provide the benefits of an easier interface for every CompuServe forum and ser-

vice. For example, many of the on-line databases available at a surcharge will still rely on their unique and sometimes daunting command-line interfaces.

Both CIM and Navigator Version 3.0 incorporate CompuServe's new Host-Micro Interface (HMI), a proprietary multilayer protocol designed to support more reliable and efficient interaction between microcomputer applications and the service's mainframes.

Until now, CompuServe has interacted with personal computer programs — even those, such as Navigator, that present a graphical interface to users — by transmitting prompts and menus in the form of ASCII text and receiving user commands in the same form. Error-correcting protocols were available for uploading and downloading files but were not used for routine interactions, leaving host-micro communications vulnerable to phone-line noise.

With HMI, however, menus, text and other information previously sent as an ASCII data stream will be transferred under CompuServe's B+ protocol, a fast, error-correcting, transport-layer standard. An HMI toolkit, which CompuServe has offered to select developers, will allow other telecommunications programs with their own user interfaces to benefit from HMI as well.

Navigator author Mike O'Connor attributed the delay in releasing the upgrade to the fact that it was developed in parallel with evolving HMI code for CompuServe's mainframes in Columbus, Ohio. He discounted speculation that the service is promoting CIM in preference to Navigator because the efficiency of his program has reduced on-line time (and thus revenues) more than anticipated. "There's not much of a conflict," O'Connor said. "CIM is for people who try CompuServe once but give it up because it's too confusing; Nav makes sense for regular users who know just what they want."

As announced in early 1989, Navigator 3.0 will sell for \$99.95, up from \$79.95 for the current version, 2.1. Upgrades, priced at \$20, will be available to registered users in the form of a download or as a package that can be ordered on-line.

CIM for the Mac will be priced at \$24.95 for current CompuServe members, officials of the H&R Block-owned service said. It also will be available as part of a new-subscriber starter kit priced at \$39.95.

CompuServe Inc. can be reached at 5000 Arlington Centre Blvd., P.O. Box 20212, Columbus, Ohio 43220; (614) 457-8600. □

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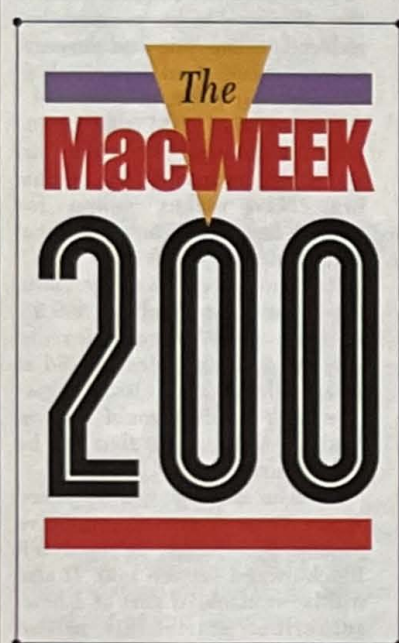
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Coming April 10: New MacWEEK 200

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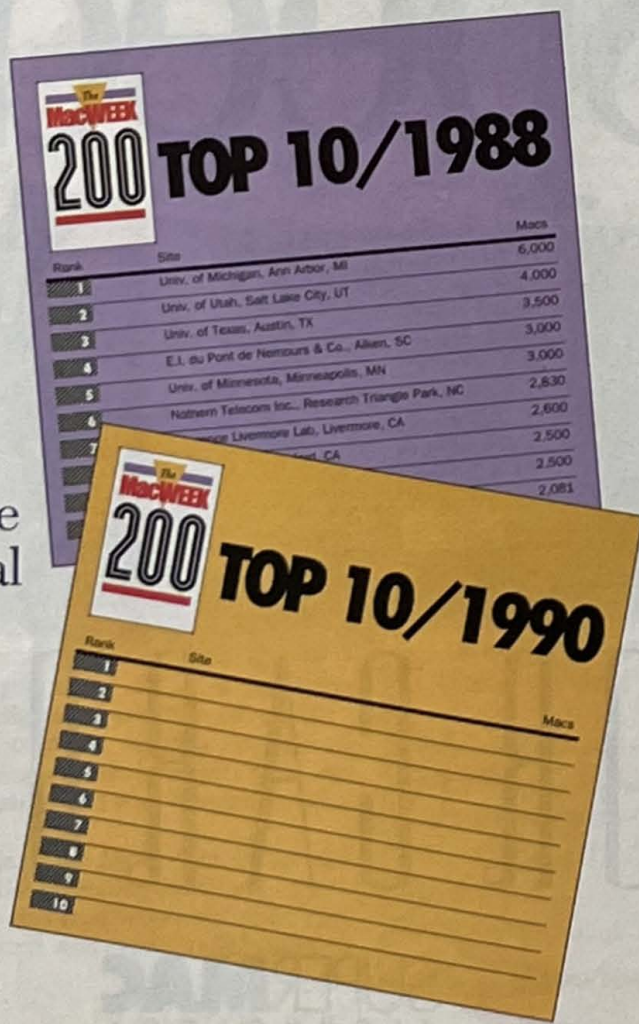


among the largest? Look for the 1990 MacWEEK 200 April 10 to find out how the Macintosh's hold on the Fortune 500, government and the academic elite shapes up unit by unit.

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MacWEEK 13 March 1990

SPSS packs 'mainframe functionality' in Mac version of statistics package

By Henry Norr

Chicago — SPSS for the Macintosh, a \$795 statistics package that promises "all the functionality of SPSS Inc.'s mainframe, mini-computer and workstation packages," began reaching users last month.

The program, announced last August, lets users choose between a Mac interface or the command-driven system familiar to veterans of SPSS for other platforms. It incorporates more than 50 statistical routines, from variance and cluster analysis to regression analysis and T-tests, with an on-line context-sensitive help system and glossary.

Data-management features include import and export in SYLK and a variety of other formats; numerous routines for reorganizing and transforming data; and aggregation, sorting and merging of files. A programming language offering extensive macro facilities and a report-writing facility are built-in.

In addition to several standard plot and chart types, SPSS for the Macintosh offers dynamic links to Computer Associates Inc.'s CA-Cricket Graph, which SPSS is offering as its presentation graphics option.

Options include several support plans and four add-on modules priced at \$395 each:

- SPSS Advanced Statistics, offering non-linear regression, discriminant analysis and other sophisticated routines.

- SPSS Categories, which supports conjoint and correspondence analysis, among other capabilities.

- SPSS Tables, for creating publication-ready tables.

► SPSS Trends, a comprehensive forecasting and time-series analysis tool.

A hard disk and 2 Mbytes of memory are required; 4 Mbytes and a math coprocessor are recommended.

SPSS Inc. is located at 444 N. Michigan Ave., Chicago, Ill. 60611; (312) 329-3300. □

Dartmouth prof readies KeyServer

By Eric J. Adams

Hanover, N.H. — A Dartmouth College math professor has developed a network-based software-management program that solves several problems associated with distribution and piracy prevention.

The program, called KeyServer, is now in use at Dartmouth, and its developer, Dr. Denis Devlin, hopes to begin commercial marketing later this year.

KeyServer's installation program lets administrators modify popular applications, based on the provisions of their site license, so they will run only after receiving a "launch enable" message over the network. To launch copies of modified programs from a local hard disk, each user must have a "network pass," which is installed as a Startup document (INIT) in the user's System folder.

If the maximum number of users allowed by the site license is using the program simultaneously, KeyServer will not give access to a prospective user. Instead, it passes a message that "All licensed copies are currently in use." When the program is freed, KeyServer returns a pop-up message to the prospective user, indicating that a launch is possible.

KeyServer also allows network administrators to monitor current software access and generates a usage log, which can be used to negotiate or renegotiate site licenses with vendors, Devlin said. Several large vendors have expressed interest in the program, he added.

"It allows us to make a wide variety of software available without having to put a lot of money down for a site license on a bet that the program will be used," said Larry Levine, director of user services for the more than 5,000 Macs on-line at Dartmouth. "We can freely distribute copies of programs without giving away control of their use."

KeyServer differs from other Macintosh software management programs because "Only the command to launch comes over the network," Devlin said. "The programs reside on the user's hard disk, cutting down on network traffic tremendously."

KeyServer also allows the administrator to turn access to a program on or off for any length of time or to shut off access to old versions of software. The program does not require a dedicated server.

Devlin is currently beta testing KeyServer at industry sites and negotiating licensing agreements with vendors. Through his company, Sassafras, Devlin hopes to have shrink-wrapped versions ready by summer. Though pricing has not been set, Devlin said it will be tied to the number of nodes per network.

Sassafras is located at 7 Low Road, Hanover, N.H. 03755; (603) 643-3351. □

SAS Institute offers net version of JMP

By Henry Norr

Cary, N.C. — SAS Institute Inc. last week announced JMP Serve, a network version of the JMP statistical visualization package for the Macintosh.

The new version promises a convenient and economical way for corporate and university sites to accommodate a large number of JMP users without running the risk of exceeding their software licenses. JMP Serve polls AppleTalk to track the number of copies of the program concurrently in use; when the number licensed is reached, further launches from any network node are prevented and a list of current users is displayed, the Institute said.

The network version adds no new statistical or graphical capabilities to JMP, a package that combines classical statistics with interactive graphics.

JMP Serve is available to corporate customers in a variety of packages, including a five pack for \$2,500 per user and packages for 20 or more users priced at \$400 per user. For degree-granting institutions, prices range from \$900 for a five pack to \$100 per user for licenses with 30 or more copies. Pricing includes one set of manuals and a year of free technical support.

List price of the single-user JMP package is \$695. A minimum of 2 Mbytes of memory is recommended.

SAS Institute Inc. is at SAS Circle, Box 8000, Cary, N.C. 27512-8000; (919) 467-8000. □

Systat 5.0 gets full Mac interface

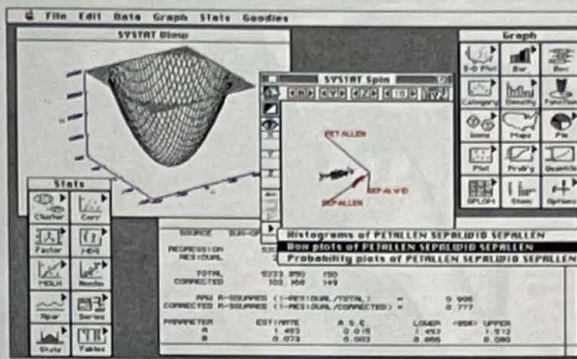
Exploratory tools, graphics enhanced

By Henry Norr

Evanston, Ill. — Systat Inc. last week began shipping an upgrade that brings a full Macintosh interface, new exploratory-data-analysis capabilities and a host of other enhancements to its high-end statistics package.

The new Systat, which replaces the previous Version 3.2 but is called Version 5.0 to match the company's IBM PC product, provides an integrated analysis environment designed to help users discern relationships between raw data and graphics. Scatterplot brushing tools link graphs and data; clicking on a point in a graph brings up its case, or vice versa.

In addition to standard graphs, plots and charts, the program incorporates a variety of specialized graphics, such as dimensional maps, contour plots and Voronoi tessellations. A new Movies tool lets the user display several plots in sequence or link a series of frames to show the progression of a plot



Systat 5.0 can generate histograms, box plots and probability plots directly from a 3-D spin window. It also offers all the statistics and graphics procedures of mainframes.

through smoothing, for example.

"The exploratory-data-analysis tools are fantastic," said beta-tester Francois Christen, who uses Systat to analyze marketing research data for the Fair Oaks Group of San Francisco. "That's where statistics are headed, and they've made it easy."

"The graphics aren't always as business-slick as some of the popular presentation packages," he said, "but this is a much broader program, with lots of plot types that aren't available elsewhere. It's designed for understanding more than for presentation."

Systat also has revamped the program's interface. Previous releases, based on the company's

offerings for the IBM PC, Unix and VAX machines, required use of a command-line interface for some operations, but with Version 5.0 all options are available through standard Mac techniques as well as from the command line.

Beta-tester Chris Nardo, a clinical data analyst at Immunotech Pharmaceuticals of San Diego said, "It's 100 percent Mac now, and that's a real welcome change." He was relieved to discover, he said, that despite the changes, all tests he had set up with the previous version for the company's experimental drug studies worked normally with the new release. He also noted that the program's enhanced

graphics now work much faster.

Even when users interact with the program via the mouse, it automatically creates a log that records the Systat procedures used. The log can be printed or saved and called up later to resume an analysis. "In some circumstances, there are still real advantages to command entry," Christen said. "This is the best of both worlds."

Systat 5.0, which requires a Macintosh with 4 Mbytes of RAM, is priced at \$795, up from \$595. Upgrades are \$90. The package ships with a revised set of four manuals, which includes introductions to the statistical concepts behind each procedure, the company said. Christen said he especially appreciated the manual's tutorial on graphics, which he said is based on the work of Edward Tufte and designed to steer users away from glitzy but meaningless "chart junk."

Systat also offers a stripped-down version of the program, called Mystat, for \$5. Although it is intended for instructional purposes and is widely used on campuses, Nardo said that many researchers working with small groups of animals in Immunotech's labs found it more than sufficient.

Systat Inc. is located at 1800 Sherman Ave., Evanston, Ill. 60201; (708) 864-5670. □

DayStar ups tempo on math processor

Flowery Branch, Ga. — Performance of your 50-MHz accelerated Mac holding back your productivity? DayStar Digital Inc. last week announced a remedy: The company is now offering a 50-MHz math coprocessor to match the clock of the main CPU in its 50-MHz accelerator boards for the Mac II, IIx and IIfx. The company said the Motorola 68882 chip would boost math-processing speed by 20 percent over the 40-MHz coprocessor it replaces.

The company's 50/030 Accelerator, priced at \$5,995 without a coprocessor, is now available with the faster math chip for \$1,000 more, the company said. Current owners of the 50-MHz board can upgrade their 40-MHz coprocessors for \$495. The board itself must be returned to DayStar for replacement.

DayStar will confront stiff new competition in the high-end Mac market when the forthcoming Mac IIfx is released. The Apple machine's floating-point unit is expected to run at 40 MHz.

DayStar Digital Inc. is located at 5556 Atlanta Highway, Flowery Branch, Ga. 30642; (404) 967-2077; (800) 967-2077. □

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Hand Tools.

You know what it's like.
If you're in graphic arts, you know
there's a lot of grunt-work.

Like rubbing-down type. And
tracing and filling letters to comp-up
headlines.

Trying to get true colors from a
junkyard of dried-out markers.

Inking and re-inking rules and
borders because of clogged pens.

T-squaring elements to be sure
they're aligned and square.

Counting characters.

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Wouldn't it be nice to spend more
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see the precise amount of letter over-
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and touching."

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resolution is true 72 dpi.



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lishing, design and illustration projects where 4-color reproduction is needed.

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Utility promises consistent color

By Connie Guglielmo

San Francisco — Technical Publishing Services Inc. has developed software that helps users tackle one of the most difficult problems of color publishing on the Macintosh — calibration.

Color Calibration Software lets Mac users calibrate color PostScript printers and image-

setters, such as the Linotronic L300, to produce film negatives that accurately represent on-screen color, said Michael H. Thorne, president of Technical Publishing Services.

The \$495 utility is application-independent so that once users have calibrated a printer or imagesetter they can expect the same results from whatever software is used, he said.

Technical Publishing promises that the program can hold the gray-scale values of screens, components that make up a colored tint, within plus or minus 1 percent of the specified values. The standard of accuracy accepted by the pre-press industry is plus or minus 3 percent.

The software works with Mac page-layout software, such as Aldus PageMaker and QuarkXPress, and graphics programs that support PostScript and TIFF formats, including Avalon Development Group's PhotoMac,

Adobe Illustrator 88 and Aldus FreeHand, Thorne said.

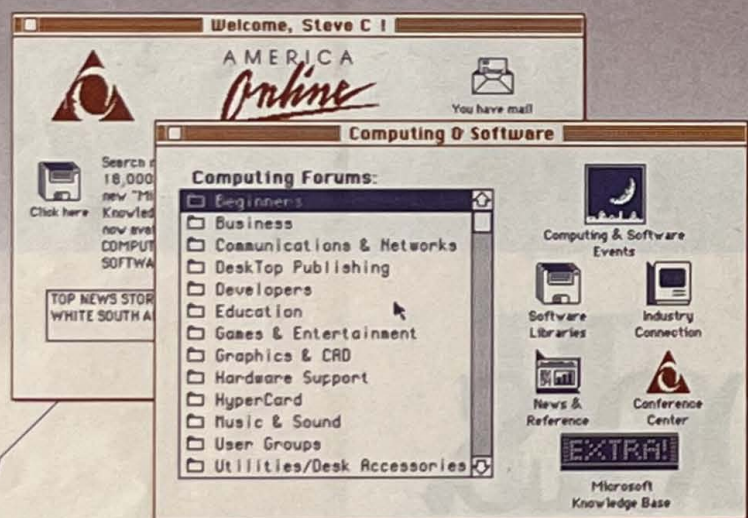
The software consists of a calibration dictionary, called ScaleDict, that resides in the printer. It is used to adjust the printer's halftoning machinery on the basis of user measurements made with a Color Test Page and specialized hardware, including a densitometer and pH meter.

Technical Publishing Services Inc. is located at 2205 Sacramento St., San Francisco, Calif. 94115; (415) 921-8509. □

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MacWEEK Magazine
October 17, 1989

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☐ 03. Research and Development
☐ 04. Graphic Arts
☐ 05. Communications: Publishing, Advertising, Public Relations, Promotion
☐ 06. Government: Federal
☐ 07. Government: Non-Federal
☐ 08. Manufacturing
☐ 09. Education
☐ 10. Finance: Banking, Accounting, Insurance, Real Estate
☐ 11. Health, Medical, Legal

- ☐ 12. Retail, Wholesale, Distribution
☐ 13. Agriculture, Mining, Construction, Oil, Transportation, Utilities

Computer Related

- ☐ 20. VAR/VAD
☐ 21. Retailer/Distributor
☐ 22. Systems House/Data Processing Service
☐ 23. Manufacturer (Computers, Software, Peripherals)
☐ 24. Computer Consultant
☐ 99. Other Businesses & Services (please specify)

2 Your Professional Title (check one only):

- ☐ A. Chairman/President/Owner/Partner
☐ B. VP/Controller/Treasurer
☐ C. General Manager/Director
☐ D. Micro Manager/Specialist/Coordinator
☐ E. Project Manager
☐ F. Art Director/Graphic Designer/Artist/Illustrator
☐ G. Manager/Supervisor (not listed above)
☐ H. Architect/Engineer
☐ I. Systems Analyst/Programmer
☐ J. Consultant/Advisor
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☐ L. Educator
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☐ Z. Other (please specify)

3 Your department/function at this location (check one only):

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☐ C. Communications/Publishing/Public Relations
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☐ G. Sales/Marketing
☐ H. Administration/Management/Personnel
☐ I. Accounting/Finance
☐ J. Education/Training
☐ K. Science
☐ L. Consulting
☐ Z. Other (please specify)

4 Are there Macintoshes or other PCs listed below owned and/or planned for purchase within 1 year at this location?

- ☐ Yes ☐ No
 (Write in accurate quantity for all that apply)

	Currently Owned (Quantity)	Plan to Purchase (0-12 Months) (Quantity)
Macintosh IIcx/Macintosh IIfx	1	
Macintosh IIci	2	
Macintosh II	3	
Macintosh SE/30	4	
Macintosh SE	5	
Macintosh Portable	6	
Macintosh Plus	7	
Macintosh (Other)	8	
IBM/Compatible Micro	9	
Workstation (e.g. Apollo, Sun)	10	

5 If your firm's primary business at this location is retailing, reselling or consulting, how many Macintoshes are sold per year (answer one only):

- ☐ A. Retailer: sold per year _____ (specify quantity)
☐ B. Reseller: resold per year _____ (specify quantity)
☐ C. Consultant: purchased by your clients through your firm's recommendations per year _____ (specify quantity)
☐ D. Not Applicable

Required: Company name and company street address must be written below or applications cannot be processed. Please print.

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Division		M/S	
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City		State	Zip

Optional: Enter home address below ONLY IF YOUR COMPANY WILL NOT ACCEPT DELIVERY. (Company information is still required.)

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City	State Zip

6 Please check the Mainframe(s) or Minicomputer(s) at your location (check all that apply):

- ☐ 01. VAX ☐ 02. IBM ☐ 03. Other ☐ 09. None

7 Do you purchase, recommend, specify or approve any of the Macintosh/Compatible products listed below?

- ☐ Yes (If yes, please check all that apply) ☐ No

- Computers**
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☐ 02. Workstations
☐ 03. Minis, Mainframes
Connectivity
☐ 10. Local Area Networks
☐ 11. Modems
☐ 12. Micro/Mini/Mainframe Links
☐ 13. Communications Software
Peripheral Equipment
☐ 20. Laser Printers
☐ 21. Color Printers
☐ 22. Color Monitors
☐ 23. Hard Disks
☐ 24. Backup Systems
☐ 25. Plotter, Charting Devices
☐ 26. Scanners
Add-In Boards
☐ 40. Memory Boards
☐ 41. Graphic Boards
☐ 42. MS DOS Boards
☐ 43. Ethernet Boards
Software
☐ 50. CAD/CAM
☐ 51. Graphics
☐ 52. Desktop Publishing
☐ 53. Desktop Presentation
☐ 54. Database
☐ 55. Programming
☐ 56. Accounting, Payroll
☐ 57. Spreadsheets
☐ 58. Music
☐ 59. Project Management
☐ 60. Word Processing
☐ 61. Utilities

8 If you help purchase, specify, recommend or approve Macintosh Computers, software or peripherals, for how many MACs do you have this involvement over the course of one year?

- ☐ 01. 500 + ☐ 05. 10-19
☐ 02. 100-499 ☐ 06. 4-9
☐ 03. 50-99 ☐ 07. 1-3
☐ 04. 20-49 ☐ 09. None

9 Please indicate the communications capabilities that the Macintoshes at your location have (check all that apply):

- ☐ 01. Local Area Network
☐ 02. Communicate with corporate workstations, mini or mainframe computers
☐ 03. Communicate with remote mini or mainframe computers
☐ 04. Communicate via modem
☐ 05. Voice/Data
☐ 09. Other (please specify) _____

10 Indicate how many employees there are in your entire company (check one only):

- ☐ 01. 1000 or more ☐ 02. 100-999 ☐ 03. Under 100

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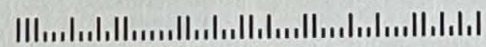
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Letters

Views differ when looking at X Window



The "X Window — Are we going to buy it?" Soapbox (MacWEEK, Feb. 13) by Vernon Keenan shows a lack of understanding of the X Window standard. X Window was developed at the Massachusetts Institute of Technology in Cambridge to provide platform and network-independent graphical user interfaces.

The X network model allows a user of one type of machine to use software unavailable for that machine. A company no longer has to buy its entire hardware and software setup from one vendor, as they can buy one machine to use as a software server. This heterogeneous approach allows more players in the game, which means more competition in hardware — which is sadly lacking in the Macintosh world — and software markets.

The X and Mac communities should work together. The one thing that really made the Macintosh popular was the consistency of the environment. The programmer knew that a mouse, a keyboard and a bit-mapped display would always be available, and could write software with this in mind. The X Window system is an admission that this was a good idea — that the Macintosh isn't a toy — and it provides this type of service for many types of hardware. The Macintosh community should be telling the X community what they have found that is right and wrong with the Macintosh interface so that we all can grow. Keenan's article reminds me of the Macintosh-PC wars that we see on information services each year, which have done little to further anyone's cause and have left both sides bitter and sulky.

David Elliott
San Jose, Calif.

The statement that "A request is queued to another CPU to do all your processing" is absurd! X specifies a client/server architecture — this means that you can run applications locally just like on a Macintosh, where the server and client exist on one machine, or you can take advantage of that little Cray XMP in the corner. And since the

application's look and feel is tied to the graphics server, all your applications will have similar attributes at your particular workstation, just like your precious Mac.

Robert L. Hays
senior programmer/analyst
KMS Fusion Inc.
Ypsilanti, Mich.

Bit maps are not "flying across the network all the time." The purpose of the X Window standard is to decrease the network traffic by defining a common language between computers. While bit maps may be sent over the network in some cases, it isn't common.

You can run applications on the local computer or a remote host using the server and you don't need to know which CPU is being used. Vernon Keenan claims that "Under X Window a request is queued to another CPU to do all your processing." That only happens when the application you are running is on a remote host.

X Window was developed to unload the host CPU and place most of the user-interface handling on the local processor. X Window also allows connections to multiple different host processors while running applications on the local CPU. In other words, it promotes distributed computing. A user's personal files may be stored on any system with storage devices. There is no requirement for centralized storage.

Norman Thorsen
Naval Undersea Warfare
Engineering Station
Keyport, Wash.

X Window is not being offered as an alternative to the personal computer. It's being offered as a better interface to mainframes. We're not talking about a tyrannical MIS department wanting to read your personal mail and control what programs you run. We're talking about a better interface. I don't know any professional programmers who think a mainframe is the best place for word processing, desktop publishing or personal databases. The Mac will always be with us.

Steven Loren
San Mateo, Calif.

An SE by any other name would be as expensive

I'm simply appalled by the article "Apple tunes in to clamor for econo Macs" (MacWEEK, Feb. 20). Apple, responding to the IBM price/performance onslaught, parries with a "low-cost" replacement for the aging Plus/SE that is no more than — that's right — another SE. This "new," under \$1,000 (with "dealer discounts," whatever they are) Macintosh is just another slap in the face to loyal Macintosh users. Many of us hoped that Apple would give us an SE/30-like machine sans display and

keyboard for our kilobuck. But what we get instead is more of the same.

Apple, get with the program. Nobody wants to buy a 68000-based machine in 1990 at any price! I am willing to bet that this new low-end Mac is the flop it deserves to be.

George M. Graves II
Sunnyvale, Calif.

Some dealers do care, so hold your fire

One more Apple dealer-bashing letter and I'm going to shoot myself! Believe it or not, there are some authorized Apple dealers who actually care about their customers. Some of us even take a bit of pride in our products, our knowledge, our willingness to help the customer and our understanding of their needs. Some of us spend much of our free time learning new software or digging into the traps and pitfalls our customers may come across. (Wow! What a concept. Could there even be some dealers that are actually Macintosh users themselves?)

Why do so many Macintosh users look at dealers as if we are there to dip into their pockets and extract as much as we can? If you do not find a dealer that actually cares about your needs, keep looking! We are out there! Many of us put our reputation on the line with every CPU we sell. Would you like to find one of us? Ask for references. Don't buy from dealers



that won't (or can't) provide you with the names of some of their customers in your line of business. Try to find out if they are commissioned salespeople or on salary. Salaried people tend to be long-term employees who can afford to recommend the right equipment, not just the most expensive. The last point is this: Expect to pay a little more for quality sales, support and service. The best price is not necessarily the best deal.

Tim Watson
The Computer Haus
Traverse City, Mich.

Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI: 323-1203; fax: (415) 243-3650. We reserve the right to edit letters for clarity and length.

Editorial

A legacy of evolutionary innovation

With so much attention focused on the gap at the low end of the Macintosh product line, analysts and customers may consider next week's introduction of the high-end Mac IIx as further evidence of Apple's insensitivity to market realities.

That view is shortsighted because it ignores the significant, although evolutionary, innovations embodied in the IIx and other new products due for introduction on March 19. These innovations will later trickle down to future low-priced models.

In light of recent management changes, these subtle design and engineering refinements, which are compatible with the past while offering more than meets the eye, will be remembered as the Gassée legacy.

The IIx introduction will highlight Jean-Louis Gassée's record of adding power and functionality to the basic Macintosh platform during his tenure as Apple Products president.

For pure speed, the IIx custom memory-management and coprocessor chips enhance the raw performance advantage of the basic microprocessor. For elegance, it has self-configuring video cards, a variable-speed fan and an improved case design.

Although many have worried about Apple's ability to innovate by painting broad strokes across the horizon, Gassée and his team of engineers and designers understood that innovation must be moderated by compatibility with the installed base. While the product line has not been altered dramatically, the overall quality of the product has been enhanced.

When these evolutionary changes find their way into new Macs at lower price points, the Gassée legacy of quality, integration and ease of use will be a key factor in Apple's future ability to differentiate itself from the competition. □

Now Sculley's R&D vision will be tested

For those who recall John Sculley's "Odyssey" claim that he invented a color TV tube at age 14 or his early enthusiasm for the idea of Apple producing IBM PC compatibles, the notion of the CEO personally managing advanced research and product development may be somewhat disconcerting.

It is logical to assume that, without a layer of insulation between product decisions and market pressures, the company will be less able to hold out as strongly for no-compromise, go-it-own-way products.

That cuts both ways. On one hand, Apple's strength has always been in staking out a position as a distinct, alternative technology. Customers have benefited by the company's ability to resist short-term buffeting winds in the market.

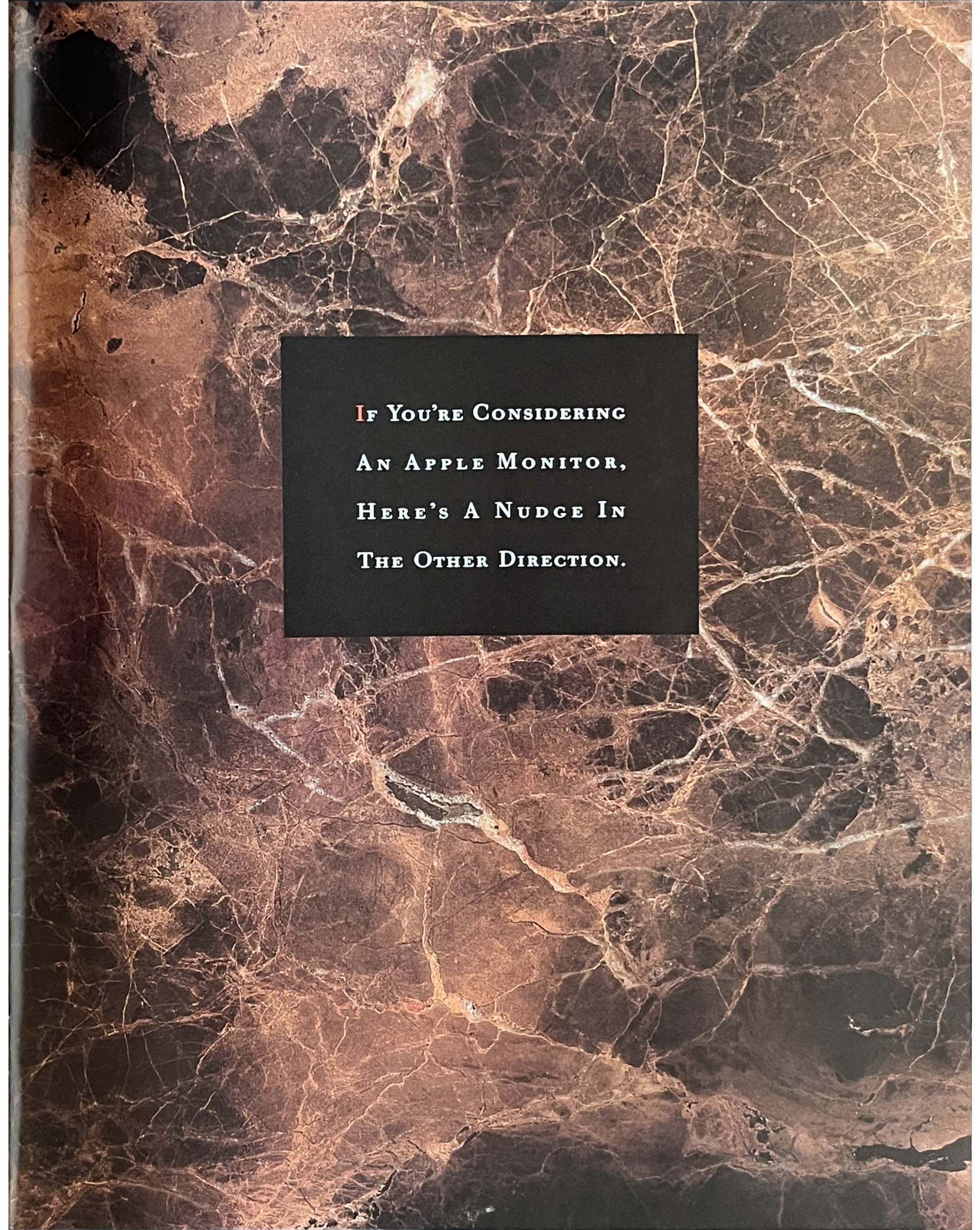
Conversely, that same stance has imbued the company with a quality of engineering arrogance that has led to delayed and overly expensive product implementations. The Mac Portable is a clear example of the not-invented-here syndrome working against the interests of customers.

Ultimately, however, it is appropriate that the chief executive assumes direct responsibility for the decisions that will make or break the company in the years ahead.

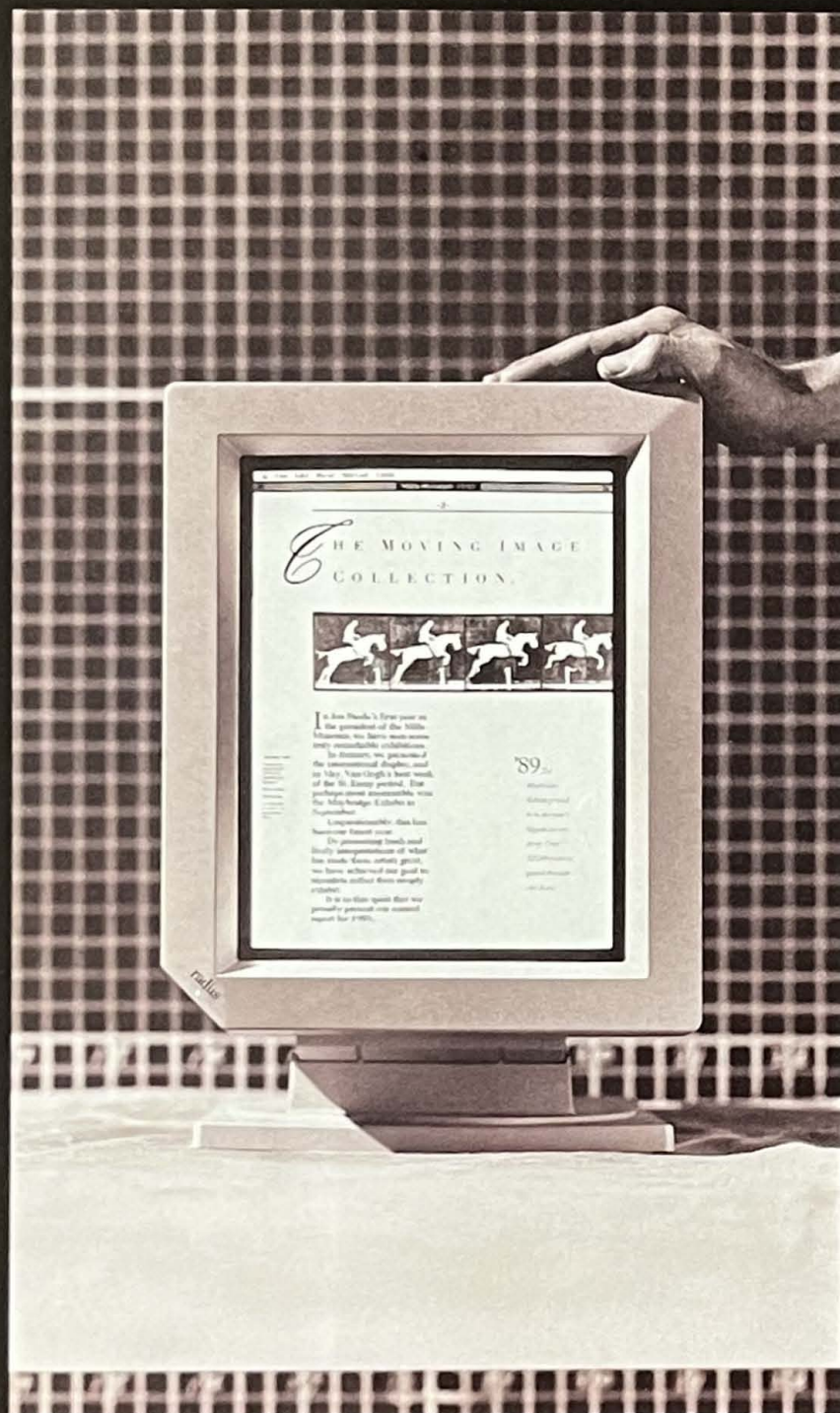
How will Apple negotiate the operating-system transition necessary to give its users the most advanced functionality without devaluing their investment in old machines and applications? What kind of next-generation computer will Apple bring to the market?

The man who gave us the Knowledge Navigator will tread a fine line in answering these and other critical questions. In the process, it should become clear just how much vision John Sculley possesses when it comes to products. □



The background of the entire page is a classic marbled paper pattern. It features a complex, organic design with swirling veins of dark brown, light brown, and cream colors, creating a rich, textured appearance.

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Was it worth the expense?

Mac cost-effective but hard to quantify

By Dennis Wyss

Every time one of Peat, Marwick, Main & Co.'s 15,000 auditors heads out for a job, he or she totes along a Macintosh.

Calculations that once took an auditor an hour on a calculator now take 30 seconds in an Excel spreadsheet. But don't ask what return on investment this leap brings to the firm. It really can't say.

Peat Marwick isn't alone. Although such substantial time savings may be of obvious economic benefit, many MIS experts say that precisely determining the cost benefits of a system is inherently difficult, if not impossible.

"We can calculate savings, but we can't quantify it," said Dick Webb, partner in charge of Audit Technology for Peat Marwick. Since implementing Mac systems in 1984, the Montvale, N.J.-based accounting giant has relied primarily on user feedback to determine whether the company is getting its millions of dollars worth from its Mac systems.

During the past five years, the company has conducted periodic surveys to focus groups of auditors as well as 33 of its offices nationwide (out of 100 total) that are now fully automated on the Mac. The surveys, completed anonymously, ask users to numerically rank, in 100 detailed questions, how the Mac affects their jobs, the degree to which it provides a competitive edge, and its effectiveness as a revenue-generating tool.

According to Webb, the results firmly convinced company brass of a high return in productivity from their Mac investment. But, he added, too many variables prevented the firm from coming up with a hard figure for its return on investment.

For what it's worth. "In general, it's very difficult to attach value to information," said Jeffrey

Moore, a business consultant and MIS lecturer at Stanford University in Stanford, Calif. "We talk about it glibly, but when you start to examine it carefully, it becomes extremely difficult."

The main problem, said Moore, is determining the time value of information and what it's worth to a company's specific demands. Due to a welter of largely uncontrollable variables, he added, there is no standard method. "With most of the projects I've been involved in, management is simply making a judgment call on these investments," Moore said.

Some consulting firms that do offer cost/benefit analysis for systems, Moore said, take either a micro or macro approach. A micro approach justifies the technology by identifiable cost savings, as in counting postage costs and comparing those expenses to the costs of a firm's new electronic-mail system. The macro approach examines overall measures of performance, such as the decrease in head count in a newly automated department as capital is substituted for labor.

Macs present their own unique factor to any potential cost/benefit analysis, said Gregg Lebovitz, manager of software development for Carnegie-Mellon University in Pittsburgh. "It's not clear that anyone understands in a quantitative way how much a good user interface affects the office in terms of an MIS system," Lebovitz said. "We know that it makes things easier, but how do you quantify that?"

Scientific analysis. Three years ago, Mike Bailey, a systems integrator at Lockheed Missiles and Space Co., set out to scientifically determine the Mac's return on investment. He introduced Macs to 60 budget analysts in Lockheed's Program Control Organization.

Bailey examined the time needed to prepare status reports on various Lockheed projects and to forecast whether a project would come in on budget. Most reports were taking a week or more to complete.

To ensure accurate productivity readings, Bailey imposed strict control over the project. All the analysts had an identical configuration of equipment and software. "It's critical in this kind of analysis that the computing environment be controlled," he said.

Bailey's goal: a cut in head count by 50 percent. "There is no way to definitely measure productivity that I know of except to measure what it costs to do the job today, and how much it costs a year from now," Bailey said. "The only way to measure that is by the number of people doing the job."

Still, Bailey said, he knew he couldn't be absolutely precise. "A 50 percent head-count reduction doesn't necessarily mean a 50 percent increase in productivity," he said. "I do know, however, that the head count decreased, and that people are happier doing their jobs."

Justifying the expense. Most businesses work out some kind of cost/benefit projection to justify the expense before purchasing a system. That's as far as some will go. Connaught Laboratories, a Swiftwater, Pa.-based pharmaceutical manufacturer, did its numbers up front. Gordon Campbell, Connaught's director of information systems, estimated that equipping IBM PCs with the software and hardware needed by Connaught's managers for spreadsheets, analysis and E-mail would cost one-third more than a comparable Mac system.

"But what you're really gaining is an enabling power that gives people new insights on how to do their work," he said.

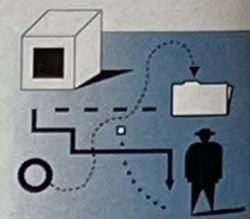
At Oakland, Calif.-based American President Companies Ltd., one of the world's largest shipping and transportation companies, Macs play an integral part in planning how cargo should be placed in container ships. That planning has led to adding six to eight more containers (at \$3,000 each) per ship.

"For those kinds of gains, how much cost analysis do you have to do?" Lebovitz asked. □

Gordon Campbell, director of information systems at pharmaceutical manufacturer Connaught Laboratories, decided before buying Macs that the Apple machine would be less expensive than a comparable DOS platform. "What you're really gaining is an enabling power that gives people new insights on how to do their work," he said.



STEVEN M. FALK



One-minute MANAGER

Odesta launches new Double Helix support program

Northbrook, Ill. — Odesta Corp. last month launched a new support service for users of its Double Helix database program. Called Tech-Connect, registered users will receive unlimited electronic-mail support via GEnie and AppleLink, unlimited telephone support, discounts on Odesta training products and services, a subscription to The Helix Journal, and a copy of the book "Database Management With Double Helix 3.0."

New buyers of the program will receive Tech-Connect free for 90 days, after which they can renew their membership for a full year at a cost of \$85. Current Double Helix users and developers have been automatically enrolled in the program through March 31.

For an additional \$75 per year, Tech-Connect members can receive an Automatic Maintenance Option, qualifying them for automatic maintenance upgrades and first consideration as beta testers for new releases of Double Helix.

Odesta Corp. is located at 4084 Commercial Ave., Northbrook, Ill. 60062; (312) 498-5615.

Study: Small businesses best market for fax modems

Wilmington, N.C. — A recent study conducted by the University of North Carolina at Wilmington examined the potential market for a Macintosh fax modem. The study concluded that, to be successful, such a product should be aimed at small to midsize businesses, and further noted that the fax modem "must have speed and compatibility and sell for an affordable price."

Fax modems range in price from \$495 to \$895 on average, according to the study, and an affordable price would be about \$600. In addition, the study concludes that "40.5 percent of Macintosh owners would buy a fax modem if it cost less than \$399."

The study was commissioned by Dove Computer Corp., based here, which is expected to announce a fax modem this year.

AEC Macintosh Forum included in June conference

Atlanta — Architectural, engineering and construction professionals attending this year's A/E/C Systems '90 conference might find the AEC Macintosh Forum, scheduled here June 12-14, to be of particular interest. Covered topics will include "Design Software Alternatives," "Site Planning Visualization Techniques," "Productivity/Efficiency through Automation" and "Third-Party Software Products for the AEC Community."

Registration for one-day attendance is \$195 until May 25 or \$245 after that date; three-day attendance costs \$345 before May 25 and \$445 after.

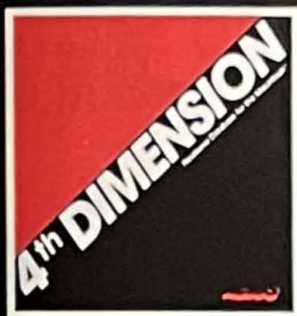
For more information, contact Nancy Johnson, P.O. Box 11318, Newington, Conn. 06111; (301) 696-0650; (800) 527-7943.

Everything you always wanted to know about software law

San Francisco — Software Law '90, a seminar for software publishers and developers, will be held here April 9. The full-day seminar will cover such topics as changes in trademark and copyright laws, an update on current litigation and notable software patents, areas to consider when acquiring software from a developer, potential liabilities of software publishing, protecting yourself from potential infringement claims, and proposals for a rational industry policy on patents and a clearinghouse for information on pending patents. A panel on reasons to seek a software patent will be presented by industry speakers Esther Dyson, Sue Morgan and Adam Osborne.

The registration fee is \$325. For more information, contact Elias and Goodman, P.C., 120 E. 56 St., New York, N.Y. 10022; (212) 421-6022.

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- Hairline to 72 point line thicknesses
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- Automatic mail merge for custom letters and invoices
- Point-and-click mailing label
- Full control of report output (font, style, size, and justification)
- 8 types of built-in color business graphs
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- Variable length text and picture printing

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Graphic objects:

- Square
- Rectangle
- Circle
- Oval
- Grid
- Lines

Automatic objects:

- Buttons
- Check boxes
- Graphs
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- Rulers
- Dials
- Radio buttons
- Radio pictures
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- Highlight buttons
- Pop-up menus
- Scrollable areas

Multi-user

- Compatible with AppleShare, TOPS, and 3Com 3Plus Mac
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- Transactions with rollback

Security

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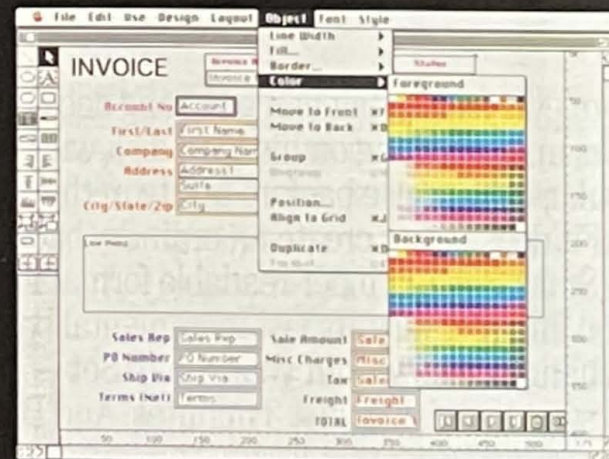
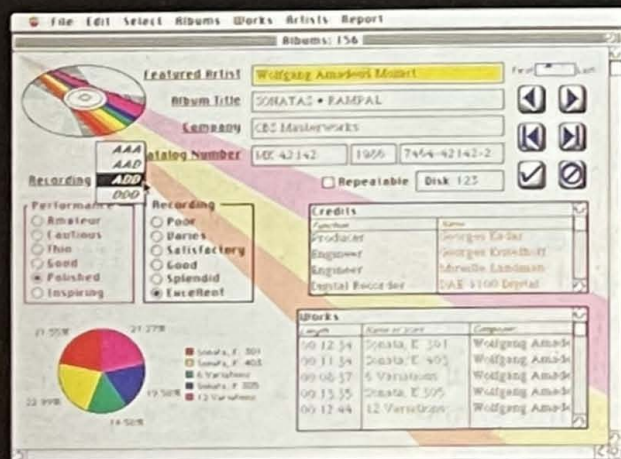
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- 7 data types
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- Subroutines
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System Requirements

- Macintosh Plus, SE, SE/30, II, IIfx, and IIfx
- Hard disk required
- AppleShare and MultiFinder compatible
- 1 MB of RAM

Specifications

- 100 files
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- 511 fields per file
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The Mac Manager

Apple and the arts of denial and happy talk

I really wonder sometimes. I wonder why I still bother caring about Apple, its people and its products. Every time I criticize the company for some problem, point out a better way to do business or offer some insight

into how it can better serve customers, I wonder. I wonder because my comments, my criticisms and my concerns aren't met with questions asking for clarification or acknowledgments that they'll "look into it," or any-

thing resembling an understanding that real problems exist. What I get can usually be reduced to two phases:

Phase No. 1: The big denial. Don, you're out of your head, pal. No way. No problems here. Everything is great. You're the only guy in the world ever to have that problem. Your colleagues must be hallucinating. That couldn't happen with our com-

puters. Pay no attention to that man behind the curtain.

Phase No. 2: Happy talk. Apple today announces the end of the world as we know it. Life will be great. Fly away in your HeloCar. Have a nice day.



BY DON CRABB

Man, oh, man, but that nonsense is really starting to get to me. I'm not some prescient super computer guru who intuits the Apple problems that I write about. I'm just a guy who listens to his friends, his colleagues, his clients, his peers and his own experiences about problems with Macs, Apple's service, Apple's warranty and relationships with Apple. And I examine those problems and see what the deal is. When that examination yields fruit, I write — often in these pages.

What does Apple do when it gets field reports of problems from my friends, colleagues, clients and peers? Unfortunately, Apple tends to respond with the two phases of denial and happy talk. They have become Apple's standard way of dealing with the issues, no matter what is going on. It can be trivial (like the need for a new CD-ROM driver to work with the Portable and the IIci). It can be not-so-trivial (like the announcement that not all of the specifications announced in May 1989 will be met in the release of System 7.0). It can be more serious (like the problem of faulty IIcx and IIci hard disks). Or it can be major (like the resignation of Allan Loren, the promotion of Michael Spindler to chief operating officer and the uncertainty regarding Jean-Louis Gassée). Apple gives us denial first, then a lovely happy-talk explanation for the event, for the problem, for the change in plans.

Just once, as a Macintosh manager, I'd like Apple to give me the straight poop — without the P.R. coating. Sure, it can remove the ultra sensitive stuff. We don't need to see all its dirty laundry. But just once we do need to see how the Apple of the 1990s makes corporate decisions. Decisions that will affect what we, as Mac managers, do with our Macs and our Mac-literate staffs.

If Apple could do that just once, and cut out the denial and happy talk, it would go a long way toward restoring its credibility among its most knowledgeable and faithful customers. Guys like me, who have been Mac lovers from the beginning, no matter what weirdness seems to flow out of Cupertino. No matter how many denials, nor how much happy talk we get. For many of us, all would be forgiven.

And maybe, just maybe, it would allow Apple to signal a new way of doing business for the '90s. Maybe it would allow Apple to get rid of that chip on its shoulder and get down to providing the computer hardware and software solutions that both the old-timers and new accounts will need.

It will be a great challenge for Apple to pull this off. Hell, it would be tough for it to just admit that it has a problem at all. But it does. And denying it to me, to its other critics and fans, and to its customers won't wash anymore. We're onto you, Apple, and we aren't happy. For your sake and ours, it's time to bury the two phases. Once and for all. □

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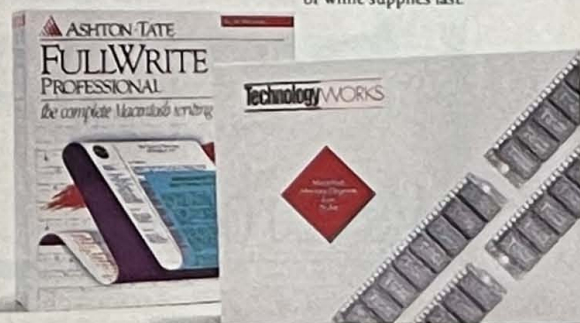
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Revenue (In Thousands)	Actual	\$8,400	\$12,300	\$13,900	\$8,700	\$13,000	\$21,300
	Forecast	\$6,453	\$8,800	\$10,050	\$9,460	\$12,000	\$18,900
	Variance	\$1,947	\$3,500	\$3,850	(\$760)	\$1,000	\$2,400
	%	130%	140%	138%	92%	108%	113%
Cost of Goods Sold	Actual	\$1,848	\$3,198	\$3,475	\$2,262	\$2,860	\$7,663
	Forecast	\$1,549	\$2,288	\$2,312	\$1,608	\$2,640	\$3,969
	Variance	\$299	\$910	\$1,164	\$654	\$220	(\$3,969)
	%	119%	140%	150%	141%	108%	0%
Gross Profit		\$6,552	\$9,102	\$10,425	\$6,438	\$10,140	\$21,300

WxC 1000

		JUL	AUG	SEP	OCT	NOV	DEC
Revenue (In Thousands)	Actual	\$2,184	\$3,198	\$3,892	\$2,610	\$4,030	\$5,325
	Forecast	\$1,612	\$2,300	\$2,512	\$2,365	\$3,000	\$4,725

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MEMO:

TO: Shannon Pitts

FR: Peter Cohen

DT: November 13th, 1989

RE: Presentation to the Board

In preparation for the annual meeting, I've created a 20-minute slide presentation on our successful entry into the small printer market.

The presentation will explain to the shareholders that, on a basis of sound marketing strategy, reinforced with our knowledge of the printer business at other levels, we have been able to grow from a 2 percent share of market, to 9 percent in 18 short months.

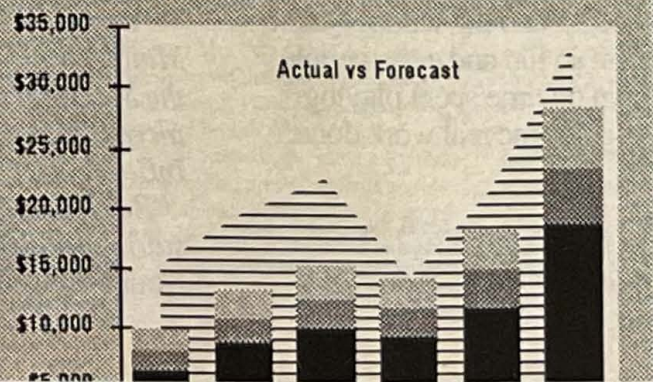
To the right is an excerpt of the presentation which illustrates our growth. Anticipated concerns will probably center around quality of service and the ability to meet market demand over the next year.

WxC 2000

	JUL	AUG	SEP
Revenue (In Thousands)			
Actual	\$8,400	\$12,300	\$13,900
Forecast	\$6,453	\$8,800	\$10,050
Variance	\$1,947	\$3,500	\$3,850
%	130%	140%	138%

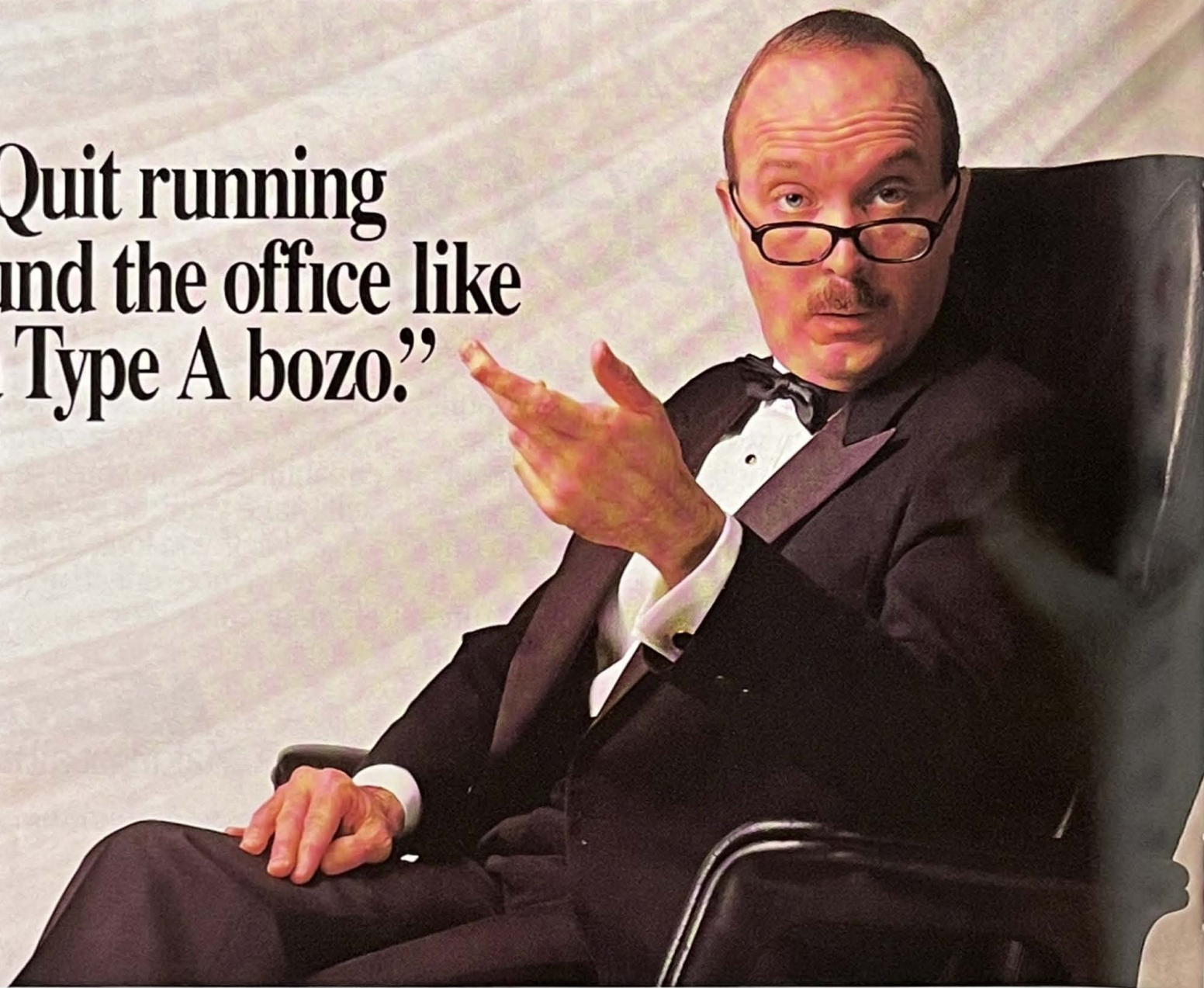
With a very respectable 9 percent share after only 18 months, we feel we can reach 15 percent by the end of the next fiscal year (see six month projection).

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**“Don’t settle for hard-to-use
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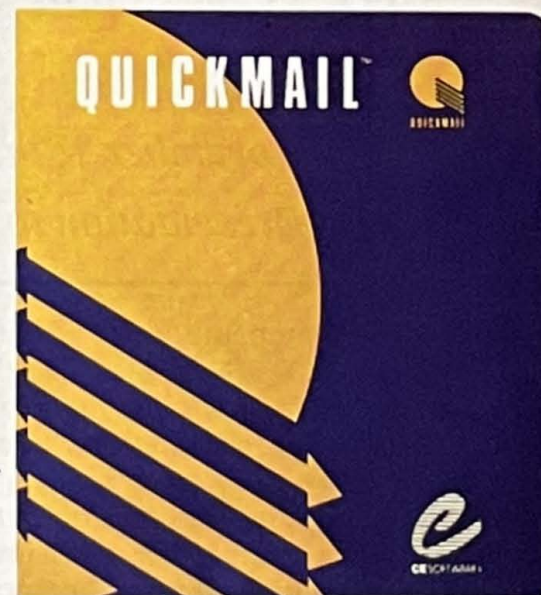
**“Want a second opinion?
Ask the critics.”**

“As we said before, CE Software’s QuickMail is the best electronic mail package on the Mac, and the latest updates have only increased its lead over Microsoft Mail and InBox.” MacWeek, 8/8/89

“Rather than exercising 20-20 hindsight, start out with QuickMail.” Dave Kosiur, Connections, July-August/89

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TRENDS

More Mac tools for electronics engineers

Mac CAE market grows to include more design tools, from simple schematic capture applications to circuit simulation and analysis programs.

By Frank Conforti

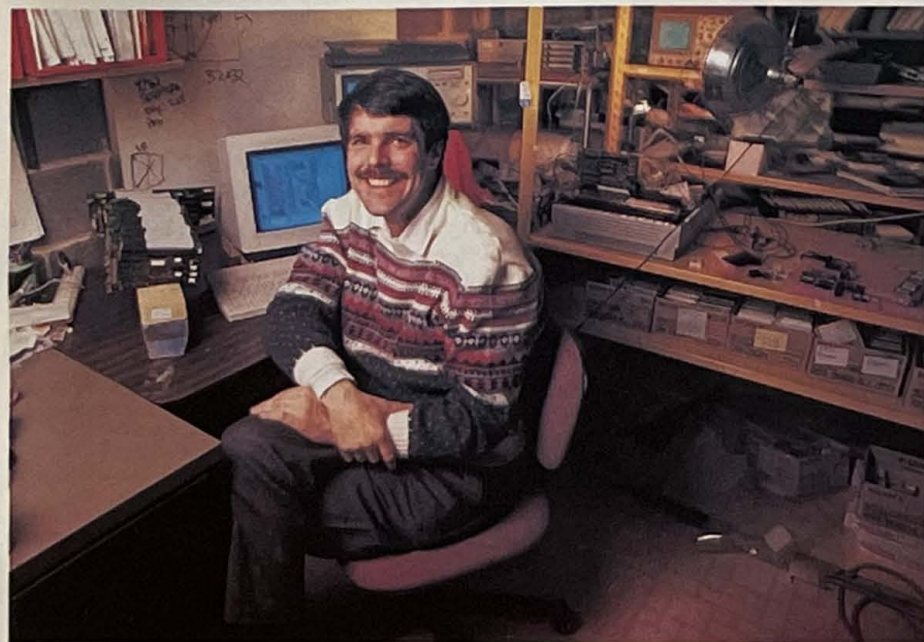
An influx of sophisticated ECAE (electronics computer-aided engineering) software in the past year has helped the Macintosh meet the sophisticated demands of electronics designers and given weight to its presence in the electronics engineering community.

Previously only a handful of companies, such as Capilano Computing Systems Ltd., Douglas Electronics Inc. and Vamp Inc., had offerings in the electronics design market. However, dozens of companies now offer design tools, running the gamut from simple schematic capture applications to circuit simulation and analysis programs, and even "soup-to-nuts" VLSI (very large-scale integration) design packages.

There are two distinct ECAE environments in which the Mac can be found.

First, there are the large corporate engineering departments, where the Mac works with other computer-aided engineering (CAE) platforms. For the Mac to perform in this arena, Mac CAE software must be able to efficiently exchange data with the various systems used in the engineering departments.

Don Colburn, an engineer at Creative Solutions of Rockville, Md., uses Capilano's DesignWorks with Douglas Electronics' Professional System PCB design software to design printed-circuit boards.



PHIL FETTERS

COMPARISONS

Blazing bits in true color from SuperMac, Radius

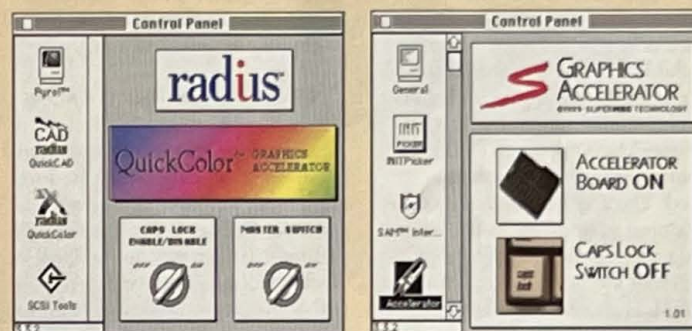
By Mary Jane Westland and Bill Westland

Until now, users of true-color and high-end CAD packages on the Mac have had to choose between relatively slow performance or expensive accelerator boards that replace or speed up the Mac's internal processors. Now these engineers and designers have a less expensive option tailored to their needs. SuperMac Technology Inc.'s and Radius Inc.'s new graphics accelerator cards speed up standard QuickDraw screen-drawing and image-transformation operations. With either of these accelerators, working in 32-bit color mode is now practical.

Radius also has shipped the QuickCAD Graphics Engine, a card that speeds up CAD display-list operations as well as QuickDraw operations. Packages such as AutoCAD, VersaCAD and Pegasys will take advantage of this board's capabilities and put the Mac in the same league as IBM PC and workstation platforms that use high-speed graphics cards.

Spectrum/24 Series III. SuperMac's Spectrum/24 Series III is a combination 24-bit video card and graphics accelerator on a single NuBus card. The accelerator requires System 6.0.3 and 32-bit QuickDraw, and will only speed up operations while the Mac is in 32-bit color mode.

The Spectrum/24 will drive SuperMac's 16- or 19-



Both the Radius (left) and SuperMac cards use Control Panel devices for switching on acceleration. Radius' QuickCAD board requires a second device for enabling display-list operations.

inch color monitors running at either a 60-Hz or 75-Hz refresh rate, or the Apple 13-inch color monitor. With an appropriate oscillator, Spectrum/24 also can drive an NTSC or PAL RGB monitor. SuperMac's new 75-Hz 19-inch Trinitron monitors are virtually flicker-free, while maintaining a 72-dpi pixel density for a large, clear WYSIWYG display. Screen resolution is 1,024 by 768 pixels.

SuperMac, like Radius, uses a combination Startup document (INIT) and Control Panel device (cdev) to control acceleration. A master switch turns acceleration on and off, and each card has a feature that lets the Caps Lock key temporarily toggle acceleration on and off for testing purposes.

Installation of the video/accelerator card and mon-

See Comparison, next page

Macs also are found in small companies where the Mac is the primary design tool. Here it must provide a comprehensive set of CAE tools.

Fitting in. In corporate engineering departments, the most important feature of a Mac CAE product is its compatibility with other CAE systems. Typical of this environment is Tektronix Inc., a manufacturer of electronic instrumentation equipment and CAD workstations. "Bucking the system" is how Marshal Bell, senior electronics engineer, described the selection of the Macintosh as a schematics-capture tool at Tektronix. Bell's biggest concern in choosing a

personal computer schematics package was output compatibility with Tektronix's in-house Unix systems. In choosing the Mac, he found that McCAD Schematics from Vamp compared favorably with Orcad, an entry-level IBM PC-based schematics-capture product. McCAD Schematics was flexible enough to alleviate his concern by generating the necessary output to Tektronix's own version of SPICE, a circuit-analysis program.

Covering the bases. Lynn Hunt, president of Hunt Technologies of Brainerd, Minn., has used Vamp's McCAD products for the past three-and-a-half years as the mainstay design program for her small electronics design firm, which specializes in communications products. Prior to selecting the Mac and McCAD, Hunt studied the offerings for both the Mac and the PC. Settling on McCAD for its cost effectiveness and the Mac for its user friendliness, Lynn has designed hundreds of boards with McCAD.

Final artwork, the most important aspect of the printed circuit board (PCB) design process, also benefits from the flexibility of the Mac.

"We have been generating our

final output on various devices, from in-house pen plotters to Linotype typesetting equipment and, most recently, artwork service bureaus that generate finished artwork ready for the PCB manufacturing process," Hunt said.

MultiFinder. Astec Semiconductor Inc., a power-supply manufacturer that has replaced older minicomputer-based CAE hardware with Macs, shows how thoroughly the Mac has been accepted in some shops. After moving from Calma Co.'s GDSII system to the Mac, principal engineer Carl Sawtell said the Mac "changed the way we approach the design process." With a combination of Mac CAE products, including Capilano Computing's Schematic Package, MicroSim Corp.'s PSpice circuit-simulator software and Design Workshop's dw-2000 VLSI layout product, Sawtell found ways to use the Mac system that weren't possible with the GDSII system.

"With MultiFinder, we simultaneously work on the circuit schematic, run an analysis, modify IC (integrated circuit) layouts and perform documentation functions," Sawtell said.

See Trends, Page 40

Comparison *From previous page*

itor configuration is a simple matter of plugging in the NuBus card and installing the SuperVideo and Accelerator INIT/cdev. When the video card is first used, it automatically cycles through a set of monitor configurations for the user to choose from. You can get these configuration options later by restarting the Macintosh while holding down the Option key, but you should not need to unless you change monitors.

Power consumption for this NuBus card is 3.3 amps at 5 volts. Since only 6 amps of power are available for NuBus cards in a Mac IIcx or IIci, you should plan card purchases carefully.

SuperMac's approach to QuickDraw acceleration is hardware-based. The acceleration instructions are stored in firmware in the video card's programmable ROM chip. Upgrades are made by replacing this PROM. Custom ASICs (application-specific integrated circuits) residing on the graphics-accelerator daughterboard execute the Spectrum/24's QuickDraw acceleration routines. Owners of SuperMac's Spectrum/24 Series II video card should note that the accelerator daughterboard will not work with the older card, but SuperMac does offer an upgrade path.

The Spectrum/24 Series III accelerates every QuickDraw

drawing command to some degree (SuperMac's ads claim speeds of "up to 25 times faster"). However, some of these operations are used so rarely that they have little practical effect on everyday work. In fact, we found display acceleration to be almost the same as that rendered by Radius' QuickColor board.

We wish that SuperMac's card accelerated in eight-bit color mode like the Radius accelerator, since there are still a number of QuickDraw-based applications that only work, or work best, in eight-bit mode. Many of these would benefit from display acceleration.

QuickColor. Radius' QuickColor Graphics Accelerator is a separate NuBus card that must be used in tandem with a Radius gray-scale or color video card and the Radius Color Display, a 19-inch Trinitron monitor. QuickColor will not work with any other video card/monitor combinations. The Radius Color Display has a flicker-free refresh rate of 72 Hz, a pixel density of 82 dpi (which causes 12-point type, for instance, to appear at about 10 points in size) and a resolution of 1,152 by 882 pixels.

QuickColor requires System 6.0.3 and 32-bit QuickDraw and will accelerate QuickDraw operations in 32-bit mode as well as 16- and eight-bit modes.

Installation of this accelerator is again a simple matter of plugging in the card, copying the software and starting up. No monitor configuration is required because QuickColor only works with one monitor, the Radius Color Display. However, QuickColor will work with any existing Radius video card that drives this monitor without upgrading.

QuickColor's manual includes clear warnings about the power consumption of the Radius video card and accelerator — together, ColorCard/24 and QuickColor pull 5.6 amps at 5 volts, which leaves only 0.4 amps available for a third card in a Mac IIcx or IIci.

Radius' approach to QuickDraw acceleration is software-based: A general-purpose, programmable RISC (reduced instruction set com-

See Comparison, Page 42

Why make QuickDraw quicker?

What exactly does QuickDraw do, and why does it need to be accelerated? QuickDraw is a series of programming algorithms designed for drawing and manipulating bit maps on the screen. It translates the mathematical descriptions of objects output by Macintosh applications into screen images.

While QuickDraw seems to be lightning-fast when working with black-and-white images, it slows down noticeably when using gray-scale and eight-bit color, and slows by an order of magnitude when using 32-bit true color. Two to four times as much screen data must be moved with 16- to 32-bit

color, and QuickDraw and the Macintosh are just not optimized to do this efficiently. Scrolling and copying are especially slow in 32-bit color mode and can take up to four times as long as in eight-bit mode.

Slow drawing and manipulation of true-color images is exacerbated by large monitors — not only does the Mac have to work with greater pixel depth, but there are more pixels to move around. Apple's 13-inch color monitor has 326,400 pixels, SuperMac's 19-inch color monitor has 786,432 pixels and Radius' 19-inch monitor has 1,016,064 pixels.

See QuickDraw, Page 44

MacInTouch

RIC FORD AND RICK LEPAGE

Photoshop represents state of the Mac art

ISSUES & TRENDS

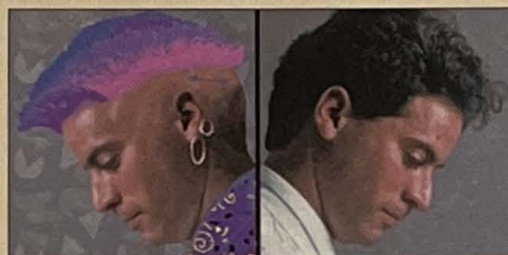
Pushing the envelope. Over the past six years, the Macintosh has been transformed from toy to power tool, while the Mac market has exploded with thousands of applications and hardware devices. Photoshop, Adobe Systems Inc.'s new graphics program, is representative of many of the changes that have taken place.

Photoshop is "photo-retouching, image-editing and color-painting software" with many practical applications in the commercial graphics industry. For example, it is used extensively in the production of this newspaper. But Photoshop is more than a product. In 1990, it's what MacPaint was in 1984 — a symbol of the state of the Macintosh art.

Although the original Finder desktop has changed little, the state of other Mac applications is dramatically different today. Typically, much of their power comes from modern Mac peripherals. These hardware devices, which communicate between programs and people, have redrawn the face of the Mac.

MacPaint was confined by the black-and-white screen, floppy drive, dot-matrix printer and mouse of the classic Mac. Today, Photoshop takes full advantage of "true-color" displays, photo-quality scanners and output devices, disks with gigabytes of storage, and even a pressure-sensitive stylus.

Paying for power. The Mac platform of processors and memory has grown to support these devices, but so has the cost. You can run MacPaint today on a Mac system that costs less than \$1,000, but a system to support even moderate Photoshop capabilities is easily 10



additional hardware, such as a video-capture device, or to add software features. A wide range of file formats is already supported, and more can be added later.

Photoshop is not

times more expensive. The requirements of high-resolution, full-color graphics quickly swallow computer resources, demanding advanced, expensive hardware.

Photoshop, too, lies beyond the range of most individual wallets at a list price of \$895. Yet in many ways it retains the original spirit of MacPaint and the Mac 128K.

Despite the power of the program, Photoshop's user interface is clear and friendly. The Undo command works as it should and error messages are meaningful. Most importantly, the program's capability for creating and manipulating images is entrancing.

The peripheral issues.

Adobe also paid attention to crucial details outside of the software program itself. The documentation is exemplary. There is unlimited free technical support and a license that warrants the product will perform substantially as documented.

In contrast to many recent products, a colophon in Adobe's manual recognizes the contributions of the individuals who created Photoshop, from the programmer and writer to the artists and testers.

Avoiding the folly of the "not-invented-here" syndrome, Adobe built third-party support into Photoshop from the beginning. Plug-in modules can be created to support

perfect and reviewers will undoubtedly discover advantages in competing programs, but it stands out from the pack as a well-conceived, robust and complete product.

Adobe has paid attention to the market, noting which aspects of other products worked well and which ideas didn't hold up. You won't find many "cute" interface tricks in Photoshop, but you will find a program that is eminently usable.

With a few exceptions, such as Aldus and Claris, we think every vendor who sells Mac software should buy Photoshop as an example of how to develop a classic product. We haven't seen a better use for \$895 in a long time.

REFERENCE

Adobe Systems Inc., 585 Charleston Road, P.O. Box 7900, Mountain View, Calif. 94039-7900; (415) 961-4400; CompuServe: "go adobe".

We welcome comments at MacWEEK, 4 Cambridge Center, Third Floor, Cambridge, Mass. 02142; (617) 497-2600; (617) 497-2646 (fax). Electronic Mail: CompuServe: (Ric Ford) 75410.2612, (Rick LePage) 76117.1765; GENie, America Online, Delphi, PAN. MACWEEKBOS; Connect: RICKLEPAGE, RICKFORD; AppleLink: (address to "MacInTouch" in Subject); MACWEEK; Internet: MACWEEKBOSTON@MCIIMAIL.COM; MCI Mail: MACWEEKBOSTON.



In summary: Graphics cards

The three graphics accelerator cards reviewed here work by intercepting calls made by application software to QuickDraw routines in the Macintosh ROM and processing them instead on separate circuits optimized for the task. This relieves the Mac CPU and main memory of the burden of having to process and transfer the huge amounts of screen data used by large true-color monitors. We saw speed increases of about 400 percent on a Mac IIcx when using these cards, a rate about equivalent to running in eight-bit mode without an accelerator.

SuperMac's Spectrum/24 Series III card/accelerator combination uses a single NuBus slot and supports several different monitors. Radius' QuickColor and QuickCAD accelerator boards work only with Radius video cards and monitors and require a second NuBus slot.

The SuperMac board, however, accelerates performance exclusively in 32-bit color mode, while the Radius accelerators support eight-, 16- and 32-bit color. Such flexibility constitutes a major advantage to those who often work in the speedier eight-bit color mode. While an upgrade to the SuperMac board requires the replacement of PROM chips, the Radius board can be upgraded with software patches loaded at start-up time. This strategy should enable Radius to respond more quickly to future system and monitor changes.

Radius' QuickCAD Graphics Engine is basically a superset of the QuickColor board; it speeds up both QuickDraw operations and display-list calculations of specialized CAD software such as AutoCAD, VersaCAD and Pegasys. Software must be programmed to take advantage of this capability, a common feature on IBM PCs and workstations.

Overall, your choice of accelerator is likely to depend on your existing card/monitor configuration and on whether you do CAD work. The QuickCAD board is the obvious choice for CAD users, while others should explore the upgrade and compatibility options of the two QuickDraw accelerators, which yield similar performance improvements.

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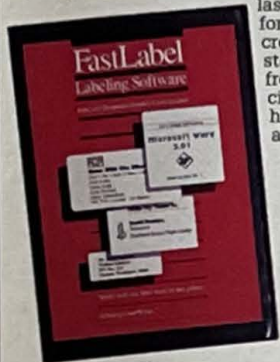
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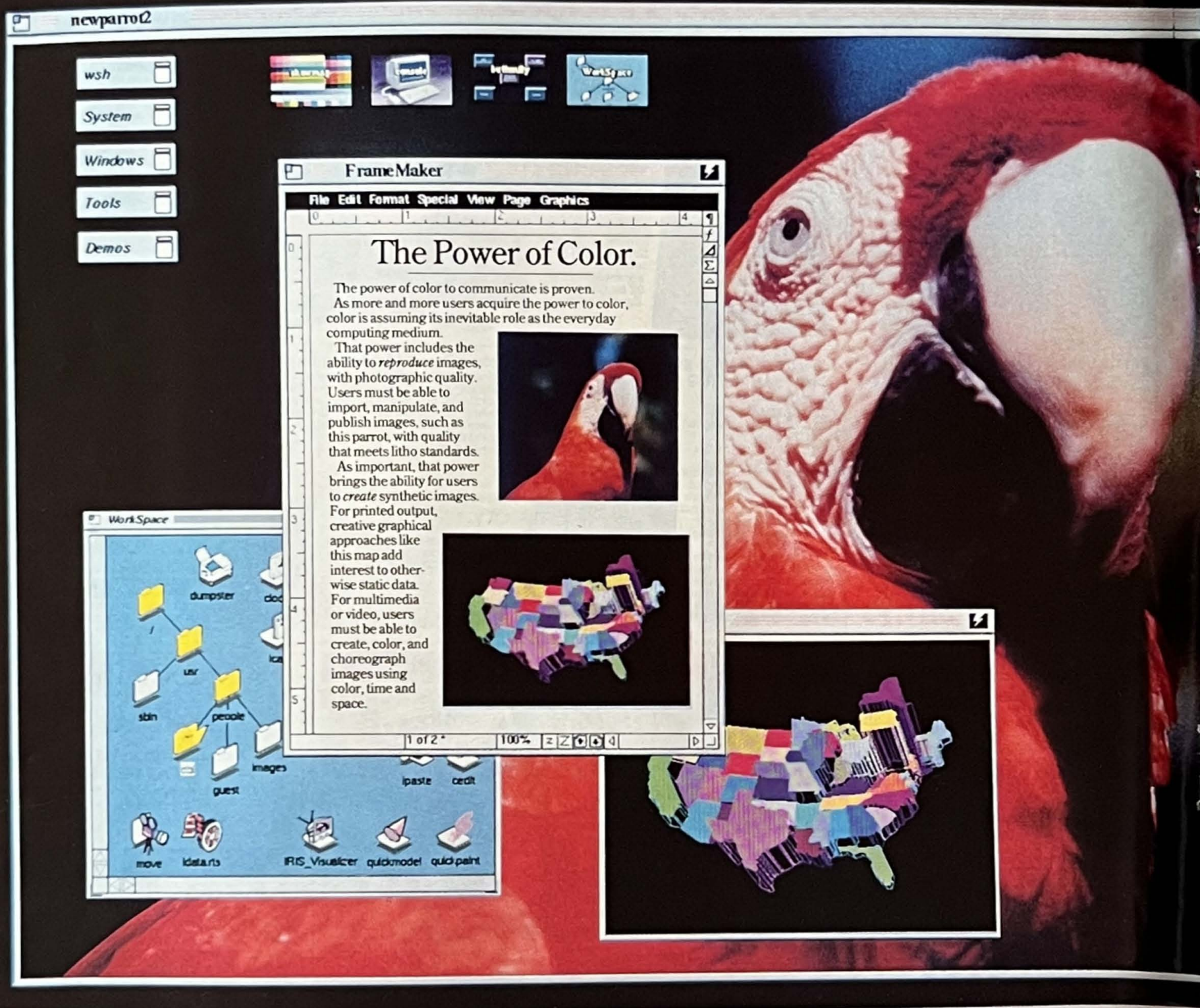
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Trends

From Page 35

Creative Solutions Inc. of Rockville, Md., put together a combination of Capilano Computing Systems Ltd.'s DesignWorks and Douglas Electronics' Professional System PCB design software, so the Mac is involved in all aspects of CSI's design process.

"Our designs incorporate many PLDs (programmable logic devices) that we simulate using Capilano's LPLC (LogicWorks Programmable Logic Compiler) product, which

are in turn inserted into the circuit design for extensive testing prior to committing the design to hardware," said Don Colburn, an engineer with CSI. Capilano's LPLC product plays a key role in CSI's engineering effort. "We have found that by maintaining the tight relationship between the schematic and the printed circuit-board layout we can optimize the design by changing any aspect of the design, including the PLD programming, if necessary," Colburn said. CSI places a heavy emphasis on MultiFinder's ability to switch

between programs, leading to a change in the design process that was difficult or impossible to accomplish on serially oriented mainframes.

"We can go through several design iterations quickly by changing the PLD programs, recompiling them, and testing their effect on the rest of the circuit," Colburn said.

CSI has developed a library of NuBus interface PLD definitions that save enormous amounts of time when starting new projects. To speed up the printed-circuit design process, CSI uses Douglas' Auto-

router product. "We manually route certain parts of the design prior to using the Autorouter," Colburn said. This has led to autoroute completion rates of 90 percent or better, lessening the burden of the manual routing stage.

Keeping the pace. Originally written to run on Digital Equipment Corp.'s VAX-based hardware, Electric Editor Inc.'s Electric Design System is an example of a comprehensive integrated-circuit design system

SOME DRAW, OTHERS REMEMBER

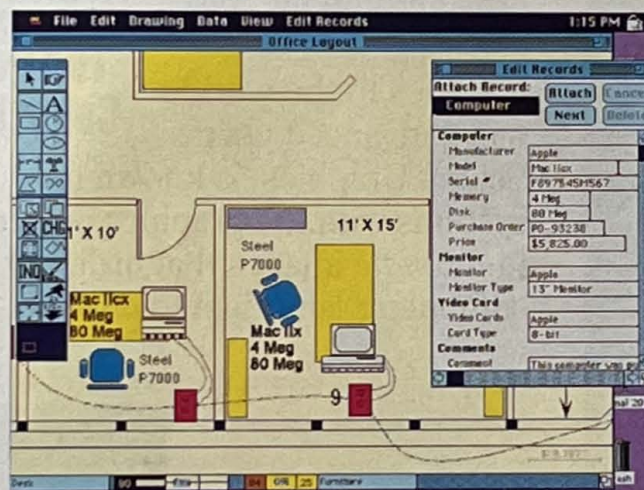
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11. You can work in real world dimensions. You tell Aperture the size of your objects using any units you want, from inches to meters to miles.
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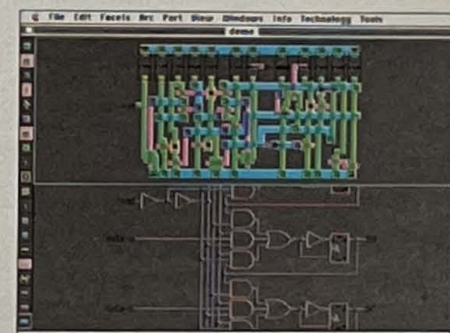
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Electric Design System from Electric Editor lets users design and simulate VLSI chips, microwave components, computer systems and printed circuit boards.



dw-2000 from Design Workshop is a VLSI design program providing sophisticated tools for electronics engineers.

that has made the transition to the Mac. Electric Design supports the design process from schematic layout through integrated-circuit layout and final mask production.

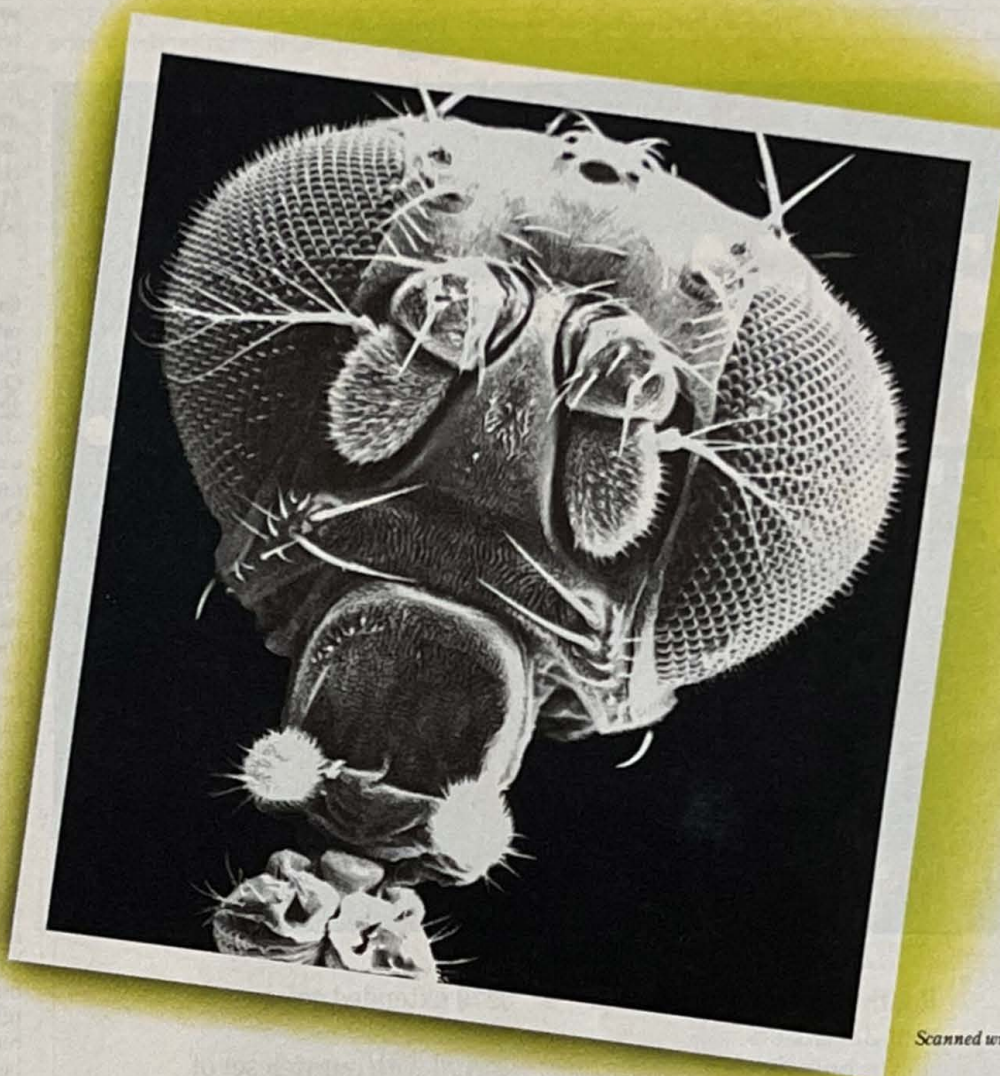
Brian Gardiner, president of Electric Editor, said the Mac product will provide a major source of business over the next two years. With performance suitable for 90 percent of most custom and semicustom design projects, Gardiner said the Mac is a viable alternative to many workstation-based CAE products.

In some areas the Mac may actually be ahead of workstations in the development of CAE tools. For example, Vamp has released a new artificial intelligence-based autorouter, the first of its kind. By using AI algorithms, the company's Trailblazer router is capable of autorouting boards once reserved only for the most sophisticated CAE systems.

The Mac will also be the first personal computing platform to boast behavioral-modeling capabilities with the rollout later this year of MacSilos II from Simucad Corp., a subsidiary of Dazix Inc. MacSilos also provides fault and logic simulation and will give Mac electronics designers simulation functionality rivaling that available on Sun-3 and Sun-4 workstations, according to Bill Fuchs, director of sales and marketing for Simucad.

Apple's push. Even with the bustle of activity in electronics applications, the Mac has a long way to go if Apple aims to catch up with the workstation market. Vendors like Fuchs said it would help if Apple used Mac ECAE products in-house. But maybe all Apple has to do is what it has been doing all along—roll out ever more-powerful Macs. □

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Graphics accelerator vital statistics

	SuperMac Spectrum/24 Series III (video card & graphics accelerator)	Radius QuickColor Graphics Accelerator (requires separate video card)	Radius QuickCAD Graphics Engine (requires separate video card)
Price	\$4,499	\$795 (DirectColor/24: \$4,095)	\$1,495
Upgrade paths	1) \$2,499 with trade-in of SuperMac Spectrum/24 Series II color video card 2) \$2,999 with trade-in of Spectrum/8, Apple 8-bit, or RasterOps 8- or 24-bit card	n/a	n/a
Monitors supported	16" & 19" Trinitron at 60-Hz or 75-Hz refresh rate; Apple 13"; NTSC or PAL RGB with addition of TTL clock oscillator	Radius Color Display (19" Trinitron) with Radius GS/C; DirectColor/16 or DirectColor/24 Interface	Radius Color Display (19" Trinitron) with Radius GS/C; DirectColor/16 or DirectColor/24 Interface; Apple 13" with 8-bit color video card
Warranty	1 year	1 year	1 year
Power requirement	3.3 amps at 5 volts	1.7 amps at 5 volts (5.6 amps total with DirectColor/24)	2 amps at 5 volts
Upgrade method	Hardware — replace PROM	Software	Software

Comparison

From Page 36

puting) processor resides on the accelerator card, and software is patched into the Mac system and loaded into the RISC processor during startup. Upgrades to this system will be via software on floppy disk.

Radius has chosen not to accelerate every single QuickDraw command but does accelerate the most commonly used operations, such as zooming, moving windows, scrolling text and pattern fills. Radius will soon release an update to the QuickColor software that is expected also to accelerate drawing of circles, round rectangles and polygon fills. Radius makes a more realistic overall acceleration claim ("up to 600 percent faster") than SuperMac, which is not terribly far from the best acceleration we experienced.

QuickCAD Graphics Engine. Radius' QuickCAD Graphics Engine is also a separate NuBus card and is a superset of the QuickColor card. QuickCAD will do all the QuickDraw acceleration QuickColor does if 32-bit QuickDraw is running. QuickCAD also supports display-list technology, which is used by CAD software to speed screen drawing. QuickCAD does not require 32-bit QuickDraw for CAD acceleration.

CAD acceleration differs markedly from QuickDraw acceleration. CAD applications typically require data precision greater than what QuickDraw offers. Information about the objects described in a CAD document is stored as floating-point data, or as real numbers. The floating-point arithmetic needed to calculate how to draw these objects on the screen is slow in comparison to integer arithmetic.

On IBM PC and workstation platforms, CAD applications have long used display-list technology to accelerate certain screen-drawing operations, among them zooming, screen redraw and panning. A display list is a sequence of drawing primitives whose data has been stored in integer form, converted from the raw floating-point data based on the resolution of the display device and the current document view. Screen-drawn code can be optimized to traverse the display list very quickly, and since these numbers are stored in integer form, transformations can be calculated quickly. The primitives themselves are simpler and faster to process than the complex drawing operations they describe.

In addition to the Radius video cards and color monitor, QuickCAD also works with Apple's 13-inch color monitor and eight-bit color video card.

QuickCAD uses two INIT/cdevs: the QuickColor INIT and the QuickCAD INIT. Like QuickColor's documentation, QuickCAD's manual warns about possible NuBus power-consumption problems.

Software is the key to acceleration with QuickCAD. The RISC processor on the QuickCAD card is loaded with acceleration software during start-up, so QuickCAD, like QuickColor, can be easily upgraded via floppy disk.

In addition to the added software supporting display-list technology, QuickCAD differs from QuickColor in the amount and speed of its static RAM. On QuickColor, 64 Kbytes of RAM are sufficient for handling QuickDraw acceleration, but QuickCAD's more demanding display-list calculations require 256 Kbytes of faster RAM.

If you're running 32-bit QuickDraw, you'll experience the same acceleration as with QuickColor. CAD applications must specifically interface with the accelerator card to make use of the display-list feature. There

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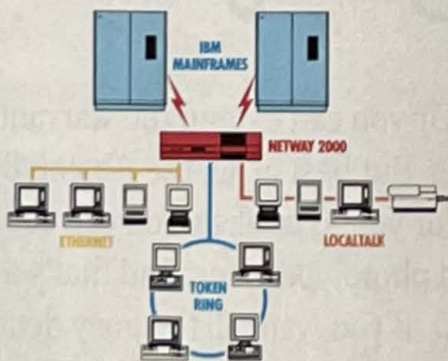
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are two approaches to this interface for CAD developers. Radius has provided a library of C-language routines that a non-display-list-based application can call to add a display-list capability. These routines also are useful for optimizing applications running with QuickCAD. The second approach applies to applications that are already display list-based, and gives them hooks into QuickCAD to implement what they already know how to do, but lets them do it faster.

AutoCAD American Release 10c5 supports the QuickCAD card. Pegasys and VersaCAD are being updated to support QuickCAD. We tested a development version of VersaCAD, and some operations were accelerated four to seven times. CAD packages that are QuickDraw-based rather than display list-based and that have not imple-

won't go wrong with either QuickColor or Spectrum/24 Series III. Each takes a slightly different approach to the problem of accelerating QuickDraw, but each does a good job. If you're upgrading an existing system, your primary consideration will be which monitor and video card you already have, since QuickColor only works with a Radius display system. The Spectrum/24 Series III will work with just about everything else.

If you're just buying into true color, you'll want to take a long hard look at monitor

characteristics and video-card features, since these accelerators provide similar performance gains. Keep in mind that only applications that run under 32-bit QuickDraw and that make extensive use of QuickDraw for display will be accelerated. Also remember that QuickColor accelerates in eight-, 16- and 32-bit modes, while Spectrum/24 accelerates only in 32-bit mode.

Depending on which model of Mac II you're using, you'll experience a greater or lesser display acceleration. You'll see the

greatest speed increase on a straight Mac II and a smaller improvement on a Mac IIci. And you will notice a difference in acceleration from one application to another, depending on its use of QuickDraw (or display-list technology, in the case of CAD). □

Mary Westland is a graphic artist, trainer and writer. Bill Westland is an independent software developer working in both the Macintosh and IBM PC environments. They reside in Southborough, Mass.

For straight QuickDraw acceleration, you won't go wrong with either QuickColor or Spectrum/24 Series III. Each takes a slightly different approach.

mented QuickCAD's other hooks — such as ClarisCAD — will not be accelerated by QuickCAD's CAD acceleration but may be accelerated by QuickCAD's QuickDraw acceleration capabilities.

Performance improvements. We have not emphasized benchmarks in this review, because statements such as "Pattern fills are accelerated 20.2 times" are misleading. What really counts is increased productivity in day-to-day usage, not how much Command X has been accelerated. We found the greatest acceleration in word processing applications, which are largely black and white. Particularly important are operations such as scrolling, moving windows and screen refresh. These operations were typically accelerated three to four times in our tests of the Radius QuickColor card. Other operations were not accelerated as greatly. We used a Macintosh IIcx with a 19-inch monitor in 32-bit color mode. Speed increases will be greater than our findings on the slower Mac II, and less on the faster Mac IIci. The same word processing operations were accelerated 3.5 to 4.5 times with the SuperMac Spectrum/24.

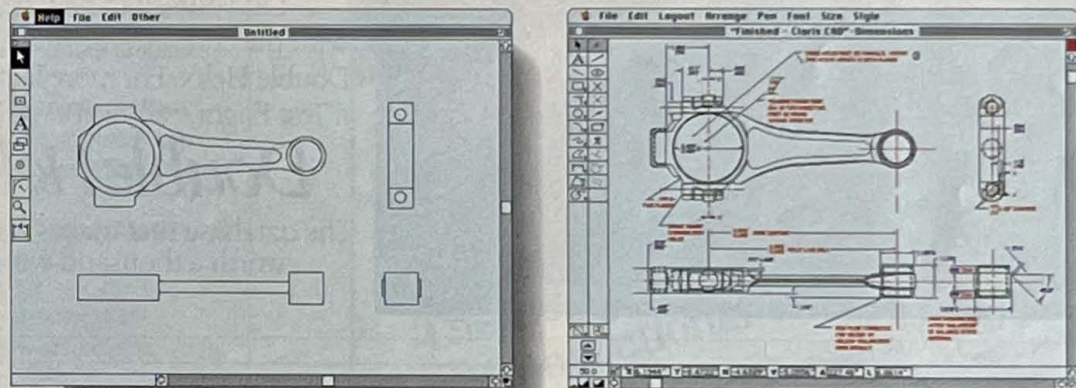
Basically, you can expect that working in 32-bit color mode with either of these QuickDraw accelerators will speed most things up to an unaccelerated eight-bit mode level, and some operations will be even faster.

Conclusions. QuickDraw acceleration is wonderful — designers and engineers will love it. And we experienced no strange system behavior in our testing that would prompt us to turn it off. If you're working extensively in 32-bit color mode, acceleration is a must, and we see no reason to wait to add this capability. We've found that we no longer switch in and out of 32-bit color mode to avoid slow screen redrawing.

If you use display list-based CAD software, the choice is clear. QuickCAD gives you both standard QuickDraw acceleration and display-list acceleration.

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Some QuickDraw calls are frequently used and tend to be very slow, such as scrolling ... These benefit the most from acceleration.

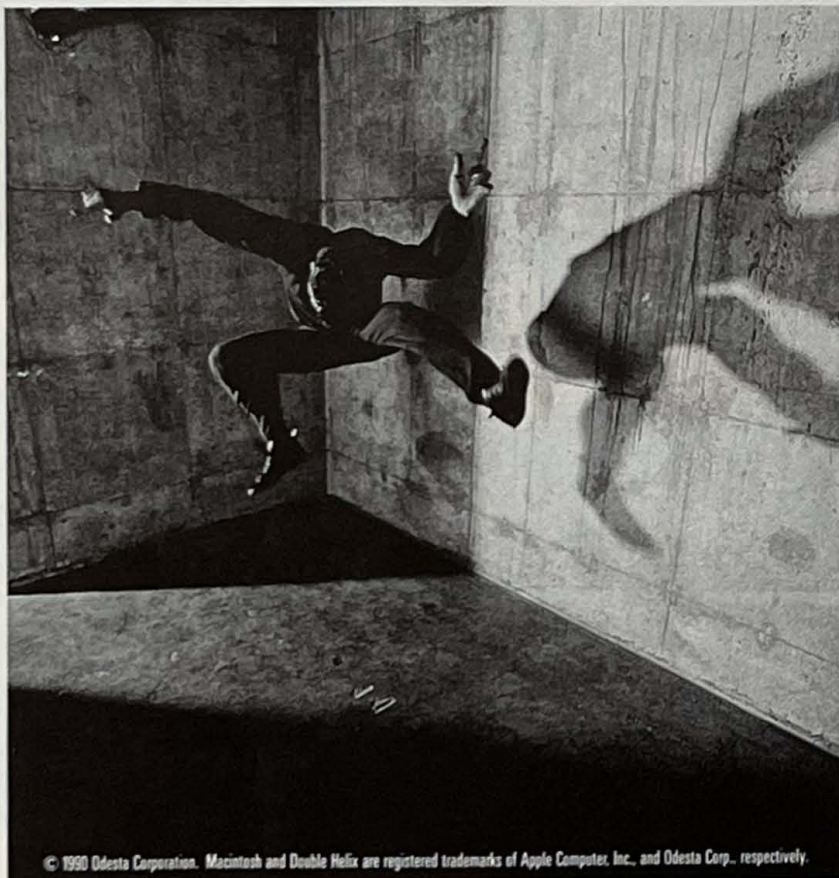
QuickDraw

From Page 36

Unaccelerated QuickDraw. QuickDraw is built into the Mac's ROM and System software, so an application doesn't need to know anything about how to blast pixels onto the screen. When an application is ready to have something drawn on the screen or to transform an existing image in some way, it makes a call to QuickDraw and turns the imaging operation over to the Macintosh system. QuickDraw uses the

same microprocessor to do its computations that applications use, and that microprocessor, the Mac CPU, can only perform one task at a time. So when an application makes a QuickDraw call, it has to wait for the CPU to draw the image before the application can do anything else with the CPU. The limit on how fast QuickDraw can operate is therefore defined by the speed of the CPU and the speed of transferring data between main memory and video memory.

Accelerated QuickDraw. Two things can be done to speed up QuickDraw's operation: You can use a faster software algorithm to calculate the image and push the pixels onto the screen, or you can use an additional microprocessor for image calculations. While Apple has improved the speed of QuickDraw's software algorithms over the years, it is still relatively slow in true-color mode. Display accelerator cards move some or all of the QuickDraw imaging calculations away from the Mac CPU and onto processors or



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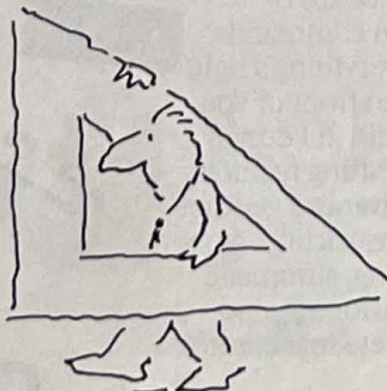
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custom circuitry built onto the accelerator cards. They are faster for three main reasons. First, the accelerators' hardware is specialized for the task. Second, the software that drives this specialized hardware has been optimized to run faster than standard QuickDraw. And third, display accelerator cards are optimized to transfer video information faster than the Mac CPU.

Display accelerators trap QuickDraw calls that an application sends to the Mac system. Instead of being processed directly by the

Mac CPU, these calls are sent to the accelerator's hardware. The accelerator then either draws into video memory or takes the data in video memory, operates on it and returns a transformed image. The key is that the accelerator is working directly with video memory, not in the Mac's main memory.

Many QuickDraw calls are already done very quickly or are very difficult to accelerate. Others can be accelerated dramatically but have little effect on everyday tasks. But some QuickDraw calls are frequently used

and tend to be slow, such as scrolling, moving a window or updating the screen. These benefit the most from acceleration.

In evaluating the speed improvement an accelerator yields, it is therefore not very relevant to look at benchmarks of individual QuickDraw operations. These may be accelerated by "up to 25 times," but real-world applications and situations use combinations of QuickDraw calls that result in a much lower average.

In general, for the SuperMac and Radius QuickDraw accelerators to have an apprecia-

ble effect, an application must be capable of running under 32-bit QuickDraw and make extensive use of the QuickDraw imaging model. Specifically, Adobe Illustrator and Adobe Type Manager are not accelerated by these cards because they use PostScript as a basis for imaging and bypass QuickDraw at least partially. On the other hand, applications such as word processors, drawing programs and page-layout packages should run noticeably faster with these cards. — By Mary Jane Westland and Bill Westland

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Newer TECHNOLOGY

REVIEWS

Pro photo retouching, no experience required

ColorStudio: Easy to use, powerful

ColorStudio

Letraset
List price: \$1,995

- True-color photo retouching and editing tool with an elegant and easy-to-use yet powerful user interface; color-calibration capabilities for monitors and output devices; Annex capability for adding third-party modules and utilities.
- Large hardware and memory requirements render some operations not Undoable; multiple windows can clutter a 13-inch monitor; documentation could use advanced examples; price a little steep.

By Becky Waring

Letraset aims to position its new ColorStudio application as the premier Macintosh true-color image-editing application. With its \$1,995 price tag, it's geared to graphics professionals involved in image creation, composition and retouching in conventional printing processes, video work or both.

In support of this endeavor, ColorStudio comes with a well-thought-out user interface and a range of selection and painting tools that can be customized easily.

These tools can handle everything from simple jobs, such as smoothing out a few blemishes in an image, to complex ones, such as defining highly specific areas to be masked, color corrected or otherwise altered.

This image-editing power has a hardware price, however. At the very least, you need a color Mac II system with 4 Mbytes of memory and a spacious hard disk. However, if you intend to do a lot of 24-bit color work (or if you use MultiFinder), you'll discover that 8 Mbytes of RAM is a must, despite ColorStudio's virtual-memory system that allows you to open and work with files much larger than the amount of actual RAM available. For professional results, a 24- or 32-bit color card is also needed.

In addition, we highly recommend using a large monitor, since working on a 13-inch display with more than a few windows open at once is quite awkward. ColorStudio would really benefit from a windows menu for choosing open but hidden images by name.

Color calibration. The first time you use ColorStudio, you'll automatically be presented with the ColorStudio calibration image. This image is a color picture of two men on a sailboat that is reproduced in the manual for comparison purposes. A dialog box then lets you set the color balance for your particular monitor by varying



Reviews in Brief: MACROMIND PLAYER AND ACCELERATOR

MacroMind Inc.'s Director has replaced the company's earlier product, VideoWorks, as the foremost Macintosh animation tool. Two recently released products, MacroMind Player and MacroMind Accelerator, allow Director animations to be played within other applications and at higher speeds.

Player permits animations created in Director to be displayed by programs that support HyperCard external commands (XCMDs). An XCMD, PlayMovie, is placed inside the program that will be used with Player, and special commands provide control of the many display options. Player also comes packaged with MM Player Manual, a HyperCard stack that contains the documentation for PlayMovie.

A second XCMD, PlayAccel, is provided with Accelerator and works with MacroMind Player to display accelerated movies. PlayMovie will not work with accelerated movies, but Player supports both accelerated and normal files.

For those who want to distribute animations, Play-

er can create a stand-alone program called a projector. You simply double-click the Player application and select the files that the projector will play.

The entire animation chain can loop continuously, but a single animation in the group can be repeated only by adding it several times. Since the mechanism for adding files is an Open dialog box, and since Player doesn't list the files already selected, creating large chains can be onerous. Once the files are selected, Player creates a separate application that can be double-clicked. If there's an error, the only way to fix it is to start again.

Accelerator creates special animation files that it plays far faster than Director plays normal files. Director is slower because it saves the separate graphic elements and information about their location in each frame of a movie and then draws each frame as it plays an animation sequence. Accelerator creates a different kind of file by reading a Director file, drawing each frame of the animation and saving the images only.

The accelerated file contains only information
See Reviews in Brief, Page 50

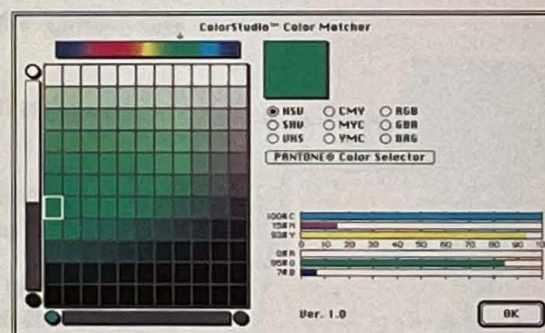
the mix of red, green and blue in the image using slider controls. Two other sliders — one for gamma and another for black — also allow the image's brightness and smoothness to be adjusted.

If necessary, you can recalibrate in the future, but it won't be necessary unless you add a new monitor or update the Macintosh System file. You also can use your own color image for monitor calibration instead of Letraset's.

Calibration is important because precision color work requires a predictable relationship between the Macintosh screen image and the results generated by color output devices. ColorStudio employs an internal RGB (red, green, blue) color model together with special print tables for output devices that control the relationship between the screen image and values sent to output devices. Popular printers and film recorders are supported with special tables; there are also general tables.

Currently there is no way to adjust ColorStudio's internal color model and print-table setup, but Letraset said that it soon will be shipping a stand-alone utility that will allow users to create their own custom print tables.

Using ColorStudio. All images opened by ColorStudio consist of two layers: a color layer and a mask layer. These layers can be viewed and edited



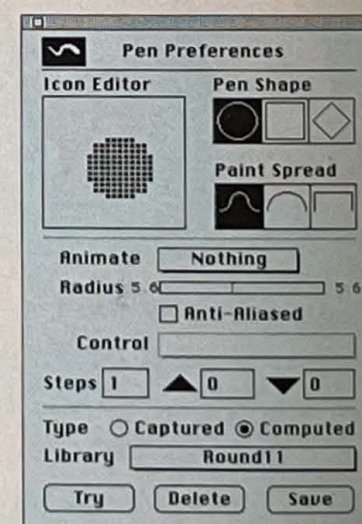
The Color Match dialog is called up by double-clicking the current color box on the Color Palette. Here you can work in any of ColorStudio's four color models — HSV, CMY, RGB or Pantone — and the axes of the color chart can be rearranged.

separately or simultaneously. Three icons at the top right of every image window indicate which layer you are working in — the mask layer, the color layer or both. When you first open a ColorStudio image, the Mask & Color icon is active, indicating that any editing you do will affect both color layers simultaneously.

The color layer is where the colored pixels that make up an image reside. It is here that you use the paint, selection and editing tools to work on color images.

The mask is a monochrome layer that, when activated, works like a kind of stencil to protect the color layer beneath it. Masking can work either in a simple or in a very complex and selective manner. For example, each image mask can contain up to 256 levels of transparency, which appear as levels of gray on-screen. The lighter the gray level in the mask, the more transparent it is and the more of an image is allowed to fall through onto the color layer.

All of ColorStudio's paint and editing tools (Paintbrush, Airbrush, Charcoal, Graduated Fills and so on), and even the tinting and paint transparency controls, can be used to edit the mask layer. Masking can be taken even further by cutting or copying part of one image and its associated mask and pasting it on top of an entirely different image and its mask. The infinite number of image,

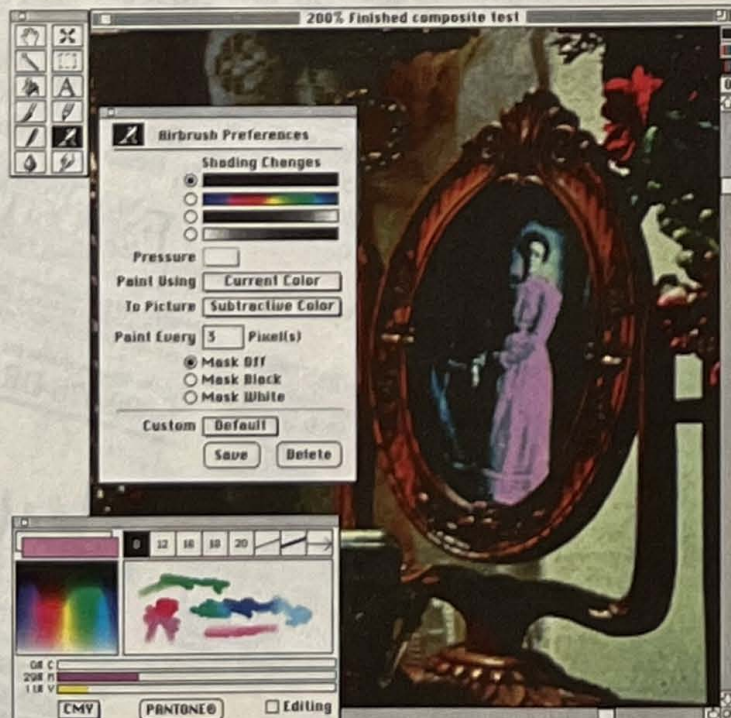


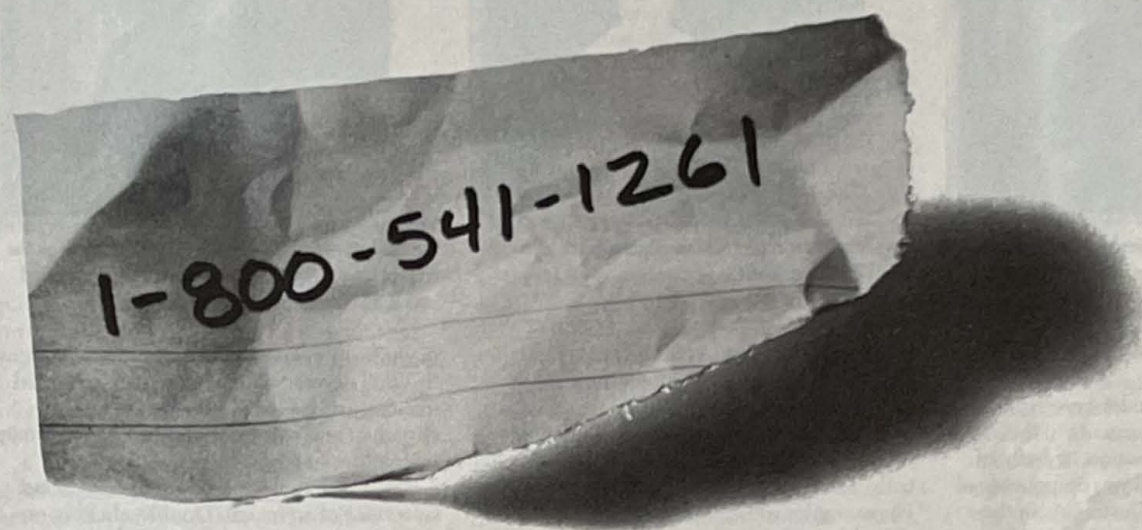
Each drawing tool has a set of pen points that appear in the Pen Preferences dialog box. Pen shape, size, variation in size and paint transparency can be defined, and custom pens can be added to a library.

mask-to-image, and mask interactions possible (controlled by the Mask Options window) can be used to great effect in assembling professional-quality images from multiple sources.

Color correcting and changing. The capability to do color correction (the remapping of color values) on all or part of an image is absolutely essential for any 24-bit retouching application. ColorStudio provides a single color-
See ColorStudio, Page 48

There are several ways to colorize a black-and-white image. Here we have set the airbrush to paint a pale pink, using the subtractive, or CMY, color model. This lets the gray shades in the original image show through the pink paint.





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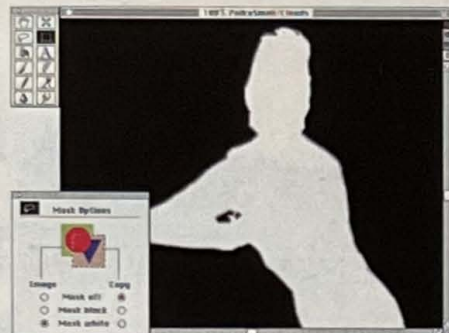
Now, thanks to Soft-Switch it's possible to link Mail 2.0 to most major email systems, including PROFS®. While with Alisa Systems or Pacer Software, you can connect to VAX® based systems. Even use the VAX as a Mail 2.0 server. And through Touch Communications, enterprise-wide messaging with X.400 is just a gateway away.

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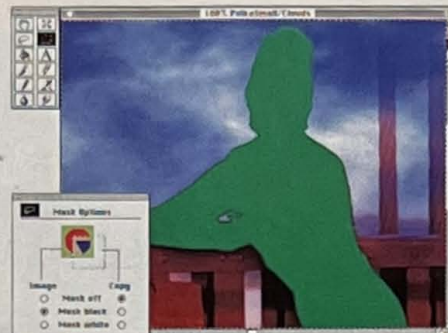
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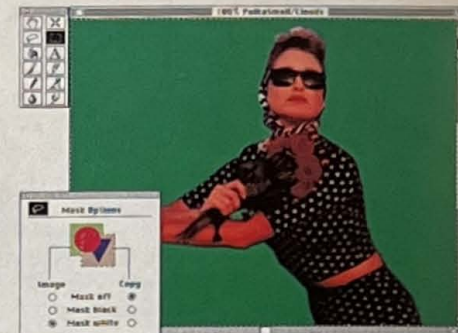
The view above shows the combined mask and color layers. Any editing done in this view will affect both layers.



The second view shows the monochrome mask layer alone. We've outlined the woman here.



The third view shows the result of masking black on the original image. When a large green rectangle is pasted over it, the woman turns green.



In this view, the mask option is set to mask the white part of the mask layer. Hence the background is replaced with the new image and the woman and flowers are retained.

ColorStudio

From Page 46

correction window with slider-type controls that allow individual adjustments in the brightness or value distribution, or both, of the cyan, magenta and yellow components of an image. It also allows adjustments in the value of all three simultaneously (black).

But ColorStudio goes far beyond the essentials here. You can limit color-correction operations to a selected area of an image; other open images will not be affected by the alterations you make. This capability lets you see color changes in context or in comparison to another image (including a copy of the original) before making them permanent by clicking the Apply button.

In addition to correcting colors, you can substitute one hue for another using the Color Change window. With Color Change, you load (or capture) a range of colors

selected from a portion of the image and replace it with a range defined by a set of sliding controls. Used in combination with ColorStudio's powerful Auto Selection tools (discussed below), Color Change is truly a professional image-editing tool. For example, you could automatically select only those contiguous pixels that lie in the loaded original color range and then change them without affecting the rest of the image.

The toolbox. ColorStudio's toolbox is deceptively lean in appearance, containing only 12 main tool icons, which can be used for selecting and editing work and for changing the image view.

Easily recognizable icons include the grabber hand, which is used to reposition and magnify images, and the Zoom tool, which is used to reduce them. Reduction and

magnification levels range from 6.25 percent to 1,600 percent. Images also can be scaled manually or via a dialog box and skewed, stretched and rotated in the process to create interesting special effects.

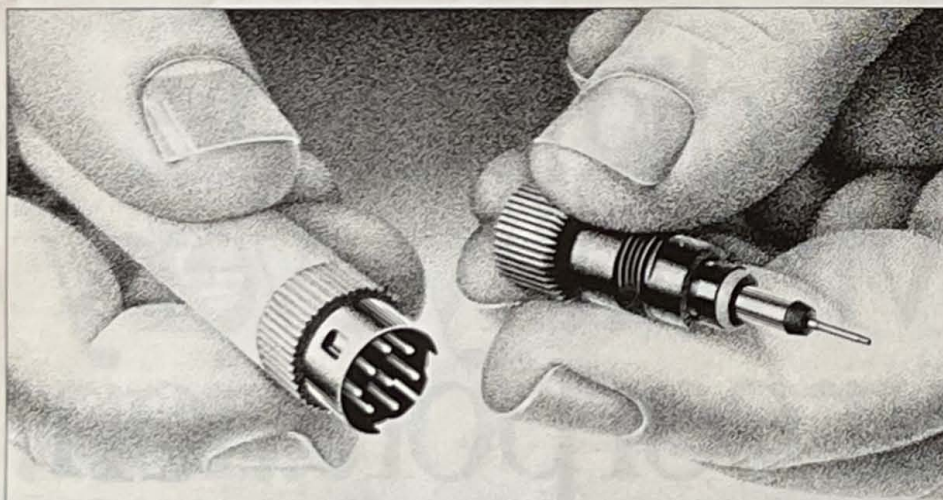
The Lasso tool is used to make freehand selections of an image. Double-clicking on this icon displays an Options dialog box in which you can define and refine the Lasso tool's selection powers, including the degree of "feathering" (soft-edged appearance) of a selection. Feathering is a must for achieving realistic effects when combining images or overlaying portions of an image. The extent to which a selection is feathered can be specified in terms of the number of pixels outside or inside the selection boundary. Lassoed selections also can be flipped horizontally and vertically.

The Auto Selection Lasso option will be familiar to users of the Magic Wand tool

in Silicon Beach Software Inc.'s Digital Darkroom. With its associated Match On pop-up menu, the Auto Selection tool can be used to select image pixels based on Exact Color, Exact Mask (this selects all contiguous pixels that have the same value in the mask layer), Close Hues, Value Range, Original Colors (this selects contiguous pixels with colors in the original range loaded into the Color Change command), or All (this selects all contiguous pixels in the current image).

While ColorStudio is primarily an image retouching and composing tool, it has a full range of paint tools (Paintbrush, Pencil, Airbrush, Charcoal, Water Drop and Fingertip) as well. Each of these tools has an associated Preferences window that can be used to set numerous painting features. You can set a tool to paint with solid or varying colors

See ColorStudio, Page 50



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REVIEWS

Prograph swaps icons for code

Prograph 1.2.1

TGS Systems Ltd.
List price: \$195

Programs written with Prograph are simple to understand and debug; changes, which take effect instantly, can be made while the program is running.

Documenting programs requires printing windows individually; no compiler yet.

By Linda Custer

Prograph, a new visual programming language from The Gunakara Sun Systems Ltd. (TGS Systems), can take a program from concept to prototype to final product seamlessly using an object-oriented environment and a unique visual language. The traditional text editor, compiler and linker are replaced by an integrated interpreter/debugger and graphical editors that can create, define and manipulate flow charts.

Prograph arose because its developers were dissatisfied with the way traditional text-based languages represent the elements of graphical interfaces. They also were frus-

trated with compilers that require rebuilds after every small code change. They felt traditional methods of specifying, coding and debugging took too long and did not allow designers to communicate with programmers.

The environment. Prograph is completely object-oriented. The variables and procedures common to most languages are replaced with "objects" that are operated on by "methods." Thus, opening Prograph summons two programming windows, one for objects and another for methods.

Creating a Prograph program — a world consisting of objects, classes of objects and actions that can be performed on them — is done with the mouse. Throughout the program, the basic rule is click to create new pieces of the program and double-click to define them.

For example, clicking in the blank area of a Class window creates a new object class. An icon appears, ready to be named. Double-clicking on the left half of this new icon opens a listing of class attributes, while double-clicking on the right side displays the class members. Class icons can be linked together to create inheritance.

The Methods window works similarly. Clicking in a blank spot creates a new

method, and double-clicking on the resulting icon opens the method's flow chart. If a flow chart becomes too complicated to be easily understood, part of it can be grouped and hidden as a submethod.

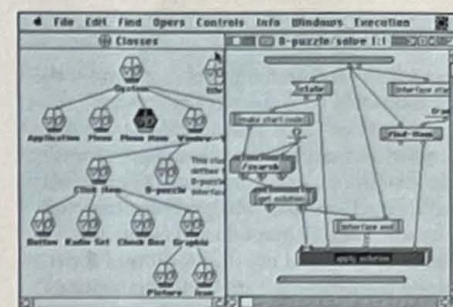
After creating and manipulating a few program pieces, and possibly consulting the manual a few times, using the interface becomes second nature. Prograph's interface is a sure contender for some kind of human interface award. The most serious flaw is that some operations, such as deleting a class, cannot be undone.

Writing a program. To program in Prograph, you must first define all the classes and methods necessary for your program. Objects also can be defined, or you can use methods to create new objects as members of an existing class.

Since most new programs will borrow from Prograph's standard system classes, which handle the familiar windows, radio buttons and other Macintosh-interface items, many users will begin by loading these classes from the System Classes document provided. Additional new classes are defined and placed in the proper hierarchical order, then methods are written to create, manipulate and destroy objects.

A Prograph program doesn't act like the standard Macintosh program with one main event loop looking for things to happen. Instead, Prograph takes care of monitoring user actions and passing them to the appropriate methods.

Since it will eventually be a compilable language, Prograph assumes no standard



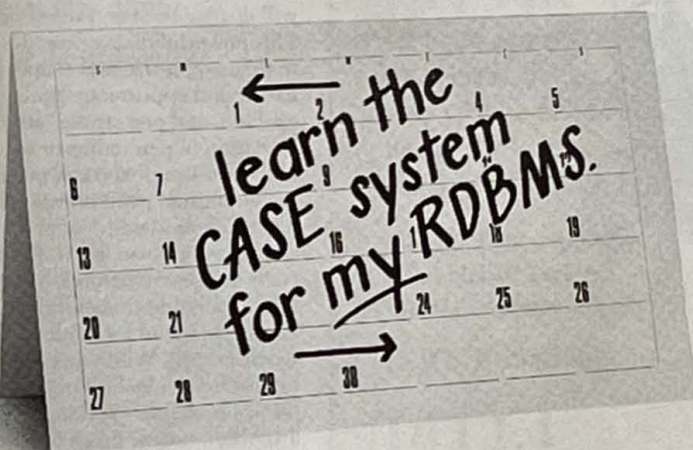
Prograph opens to two windows, Objects and Methods. The classes of objects are linked to show inheritance.

menu bar and leaves the user to define all interface elements. However, methods for standard Apple, Edit and File menu functions are included in the standard system classes. All you have to do is call up these methods from your program.

The initial menu bar and a list of windows for display at start-up can be easily defined. Once a window is displayed, Prograph will watch for clicks in its items and handle events with much less help than is required by most languages.

Throughout the development process, Prograph helps test and debug your program. Individual methods can be executed alone or the whole program can be run. Each step can be viewed on a flow chart as it happens, and methods, classes, attributes and objects can all be changed on the fly without having to start from the beginning. Conditional or unconditional break points can be set at any point. A designer can sit down with a pro-

See Prograph, Page 52



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Reviews in Brief

From Page 46

about how each frame has changed from the previous one, so if there is little change, memory is saved. Unfortunately, many kinds of animations change radically from frame to frame, and these sequences, when accelerated, are much larger than standard Director files. The number of colors or shades of gray and the dimensions of the screen contribute greatly to the animation size. We found that an Accelerator file was

typically six times the size of the original Director file. This means a one-minute animation can balloon up to 4 Mbytes when accelerated.

MacroMind Accelerator, like much of multimedia today, provides both a solution and a new problem: It will accelerate animation, but generally it can load only short segments. This means the multimedia producer is faced with long pauses to fill or ridiculously short animations. To really shine, Accelerator needs either huge

amounts of memory (perhaps even a silicon disk) or short animations that can be looped repetitively, like the demos provided with Accelerator.

Perhaps the best news is that MacroMind has changed its licensing policy. Previously, licensing was on a per-disk basis, with extra charges for color support. MacroMind now asks \$250 for each commercial application that uses its XCMDs. Their use is free for educational and non-commercial distribution, but a license

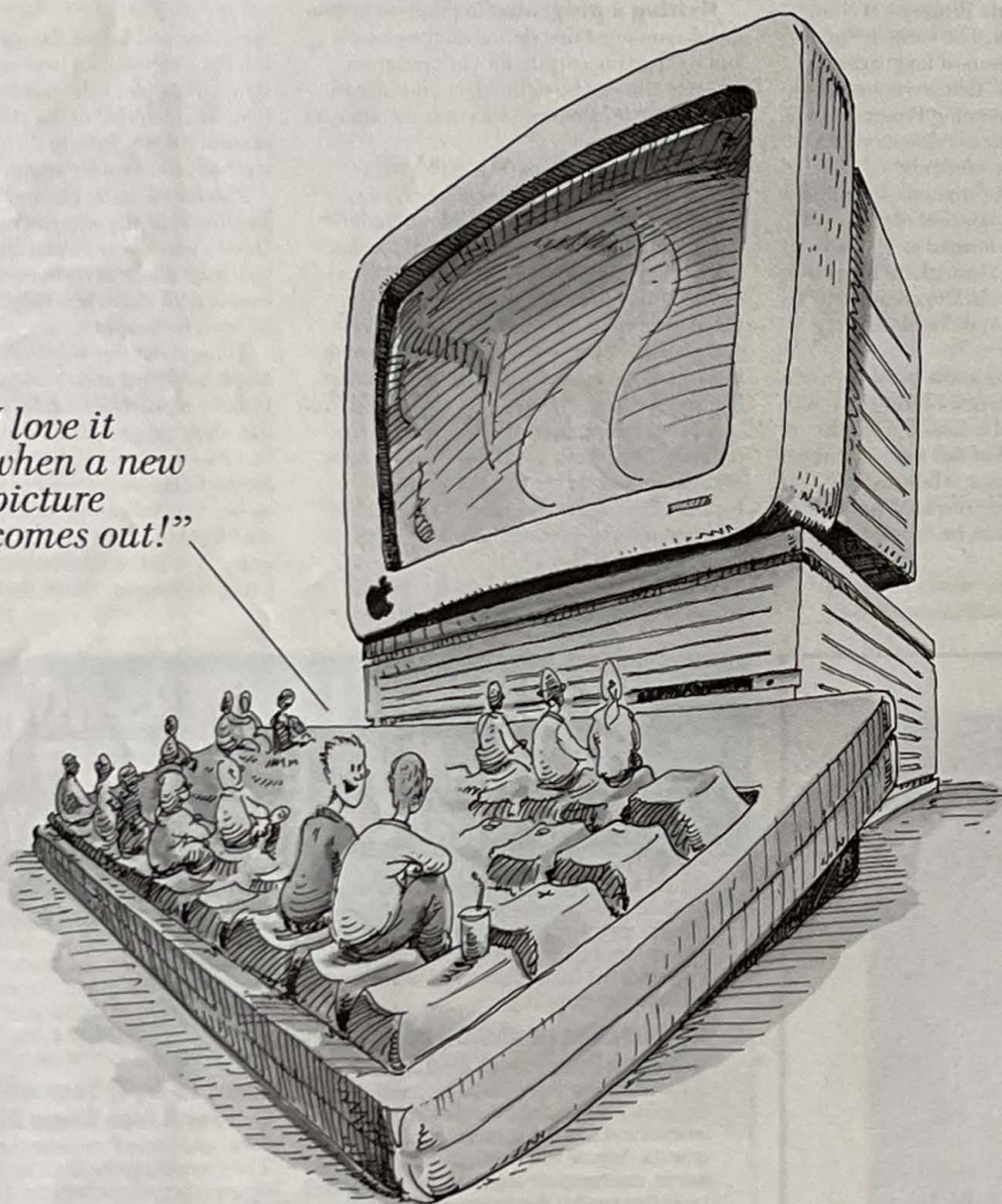
agreement is required in all cases.

MacroMind Player with the PlayMovie XCMD was sent free to registered users of Director 1.0, along with Director 1.0.1, which had some minor bug fixes.

MacroMind Accelerator, including PlayAccel, retails for \$195. Existing owners of the VideoWorks accelerator can upgrade for \$50.

MacroMind Inc. is located at 410 Townsend St., Suite 408, San Francisco, Calif. 94107; (415) 442-0200. — *By Michael D. Murie*

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ColorStudio

From Page 48

or with some special effect. You can also set a tool to paint with varying degrees of "pressure" (as if you were pressing harder or more lightly on the tool) or to act upon the image's mask layer in different ways.

Likewise, you can change the characteristics of the pens associated with a tool in quite dramatic ways and even create what are called "captured" and "computed" pens. A captured pen is a copy of the currently selected image area that can be saved for later use. A computed pen performs according to a set of specifications that you provide.

Pens are displayed eight at a time at the top of the free-floating Color Palette window. If you drag to the right beyond the last pen, more pens — up to 22 if they have been predefined — will scroll into view (others can be stored in a pen library).

While ColorStudio comes with a standard set of pens for each paint tool, you can alter existing pens or create entirely new ones easily. Double-clicking an existing or blank pen icon in the Color Palette will display the Pen Preferences dialog. This powerful dialog provides the means to define pen size and shape, paint behavior and appearance (spread rate and opacity), and pen stroke "attack and decay" (variation in pen radius or opacity or both over time). You can produce some really unusual paint effects with this pen-definition method.

However, if you are working with large color images, remember that there is a limited amount of memory allocated to the Undo command for paint tools (about 128 Kbytes or so). While this may seem like a lot, each pixel in a ColorStudio image is 32 bits in depth. Working with a typical 1.6-Mbyte image on an 8-Mbyte Mac II, we were able to draw a one-pixel-wide line only about 2 inches in length before Undo ran out of steam. If you make a mistake, the only way to recover is to revert to the last saved version of the image. The moral here is to save your work at very frequent intervals, especially before any major image surgery.

Text is another painting option, but since it operates in a bit-mapped mode only, you will probably only use it for comping or artistic effects. PostScript text can be combined with ColorStudio images in desktop publishing packages for highest resolution in finished art, although ColorStudio's separation and calibration capabilities may be lost in this process.

Filters and Annexes. Special filters such as Star Lens and Trace Edges can be installed in ColorStudio's Effects menu via a Font/DA Mover-style utility called the Resource Mover. Other available filters include Blur, Soften, Sharpen and Diffuse. Image cropping, posterization, inversion and vignetting also are supported.

The Resource Mover also is designed to work with third-party modules called Annexes, which allow users to extend ColorStudio by adding new tools, menu items and even new special function windows.

The Color Palette. The Color Palette is where you select existing colors or mix your own based on the RGB, CMY (cyan, magenta, yellow) or HSV (hue, saturation, value) color-selection systems or the Pantone Matching System. The Palette window is well-designed in that it offers several methods of selecting a specific color.

For speed, you can drag through the Hue/Value map, which is a rectangular area displaying the available colors in continuous-spectrum format. For pinpoint accuracy, you also can display the Color Matcher dialog by double-clicking the current color box at the top left of the Color Palette. In addition, ColorStudio supports a standard Pantone color selector.

File formatting and output. ColorStudio directly handles RIFF (Letraset's proprietary image file format), TIFF, PICT, Encapsulated PostScript (for output only, not input) and Targa images. The Targa raster-

cal support, but the company is in the process of setting up a new multilevel user-support system with a fee structure to replace its former unlimited toll-free support line. The new system was not in place during our evaluation.

Conclusions. ColorStudio, along with Avalon Development Group's PhotoMac and the just-released Photoshop from Adobe Systems Inc., mark a maturing of the Macintosh color market. The powerful retouching and

separation capabilities of these programs are touted as competing with super-expensive Crosfield, Scitex and Hell systems. While these claims have yet to be proven, we can say unequivocally that ColorStudio packages an excellent mix of powerful retouching features in an amazingly easy-to-use interface. Its color-calibration capabilities are also unique, and they are designed to provide the consistency of output required for professional work. We also like the Annex feature, which should result in a host of

additional capabilities for the program.

One reservation we have regards ColorStudio's pricing. At \$1,995, it is more than twice the price of Photoshop or PhotoMac. Letraset seems to believe that the power and functionality of the program justify the price and that graphics professionals will be happy to pay to get ColorStudio's capabilities on the desktop. We believe it may become an issue.

Letraset is located at 40 Eisenhower Drive, Paramus, N.J. 07653; (201) 845-6100. □

Letraset's ColorStudio, along with Avalon Development Group's PhotoMac and the just-released Photoshop from Adobe Systems Inc., mark a maturing of the Macintosh color market.

image file format is supported primarily to allow ColorStudio to access the large number of color images created in the IBM PC environment using Targa. Additionally, ColorStudio can import and export files in Crosfield 9-track tape format via a special tape device driver.

Letraset has made sure that ColorStudio supports a wide range of color input and output hardware. Slide and flatbed scanners directly supported include Eikonix, Nikon, Howtek and Sharp models. For output, virtually any film recorder, imagesetter or PostScript printer can be used.

Of course, ColorStudio will generate four-color separations, and it even provides a Preview CMYK option, which lets more advanced users view and adjust the separations before printing.

Documentation, technical support. The ColorStudio documentation is well-written and backed up by both a VHS videotape and an audio cassette. Full-color examples are distributed sparsely but effectively throughout the manual. However, color retouching is an extremely technical and complex task, and we think a series of advanced examples showing off ColorStudio's full capabilities would greatly enhance its utility.

ColorStudio has on-line help that covers all major topics well. The text is to the point, and many help screens have full-color graphics that illustrate what the text is trying to convey.

Historically, Letraset has had good techni-

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DPI

Prograph

From Page 49

grammer and make changes on the spot, or a user who doesn't like a particular window in a program can change it without breaking the entire program.

Prograph doesn't yet include facilities for locking a program to prevent changes or for password-protecting code. Important programs need to be archived carefully because clicking in the wrong place might modify or change a program in an unknown way. Com-

piling a program with the forthcoming compiler will prevent changes to working code, but uncompiled versions still need to be saved for development purposes.

Power vs. ease of use. In the spectrum of programming tools, Prograph belongs somewhere between traditional compiled languages such as C and Pascal and newer user-interactive "programs that can be programmed" such as HyperCard.

As with HyperCard, no complicated Tool-

box calls are necessary to find and manage resource handles. However, Prograph directly supports most functions in the first four volumes of "Inside Macintosh" if they are needed, and user-defined primitives (the counterpart of HyperCard external commands and external functions) can be written in C or Pascal for even more flexibility.

The visual nature of Prograph makes building programs simple but documenting them difficult. Any window in Prograph can be printed individually, but there's no command

to print everything. To save the "code" of a program on paper, windows have to be opened to display all class hierarchies, classes, attribute sets, instances, methods, sub-methods and cases. Similarly, tracing the flow of a program from start to finish can mean opening and closing dozens of windows.

Prograph comes with both tutorial and reference manuals. Each is well-organized and indexed. The tutorials are clear and easy to follow. However, the programs developed in the examples are fairly simple, and because Prograph is a new, Mac-specific proprietary language, third-party books are not an option. Any further programming notes that TGS Systems might publish would be welcome.

The reference manual is very thorough. It describes the syntax and data types used by Prograph and the class and method editors. It also provides a guided tour of Prograph's menus and windows. It documents how externally compiled routines can be developed and integrated.

Support is offered to all registered users. A private electronic bulletin board system is operated by TGS Systems for Prograph users, and representatives maintain electronic addresses on on-line services. Technical service representatives also can be called directly.

Conclusions. Prograph is not just another language. It incorporates a philosophy that a computer that relies on an interface of icons and buttons should not be programmed using words. Its developers said they believe that programming should be incremental and that even incomplete parts of programs should be able to be composed, tested, corrected and expanded, all at the same time. Prograph goes a long way toward making that ideal possible.

Prograph will appeal to a wide variety of enthusiasts. It is more difficult to learn and use than HyperCard but requires less formal training than C or Pascal compilers. Moreover, it can build a working prototype of a complete program or a user-interface shell with less bother than products like Prototyper linked to a C or Pascal compiler. It doesn't require mastery of the five "Inside Macintosh" volumes just to display a dialog box, either. Its implementations of persistences and edit-while-executing are unique and useful.

Since Prograph will not generate stand-alone code until the compiled version is released, it will be used for few, if any, commercial programs. However, for in-house applications the time saved in programming will more than make up for the performance deficiencies of uncompiled code. If primitives for the time-consuming parts of the program are written in C or Pascal, and accessed when needed, Prograph may be a good choice even for computation-intensive programs.

We feel that Prograph is an excellent example of what Macintosh programming will be like in the future. It still has a few rough edges and will be more useful when its compiler is released, but it demonstrates the power of object-oriented programming more clearly than any text-based language can. The large community of programmers and users who find HyperCard too soft and professional compilers too hard might find Prograph just right.

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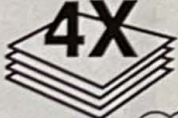
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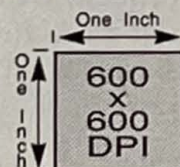
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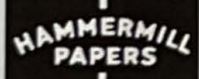


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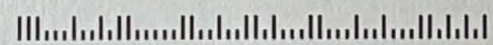
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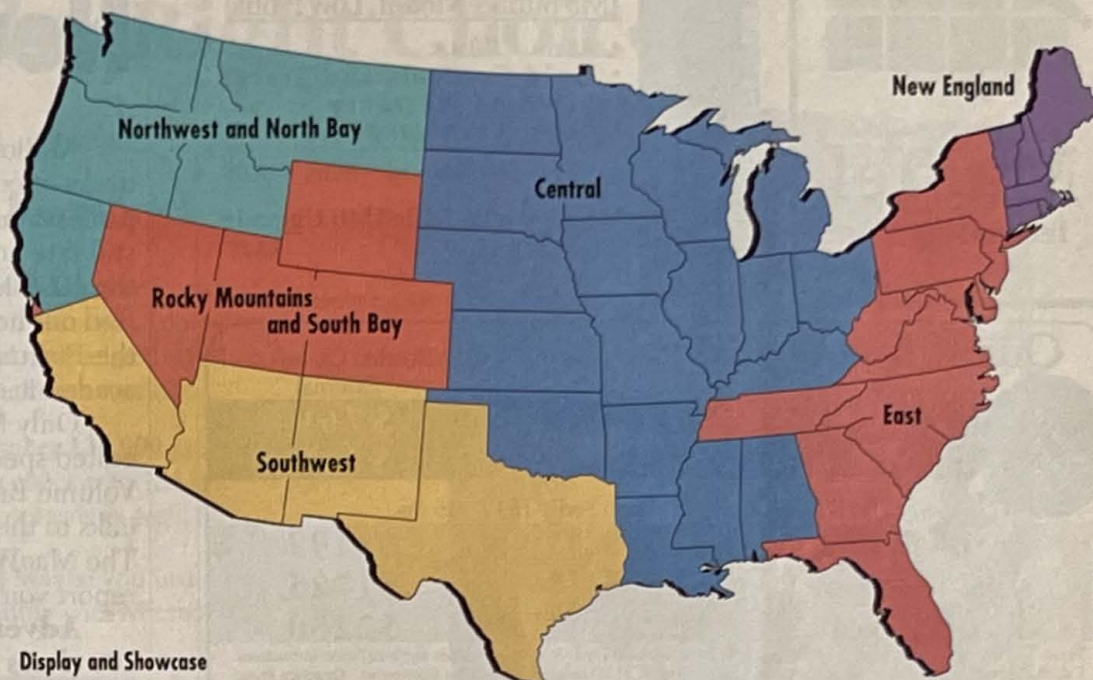
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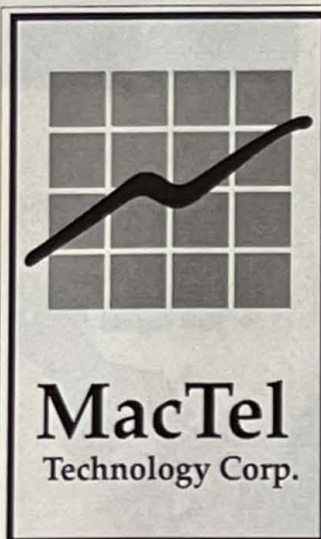
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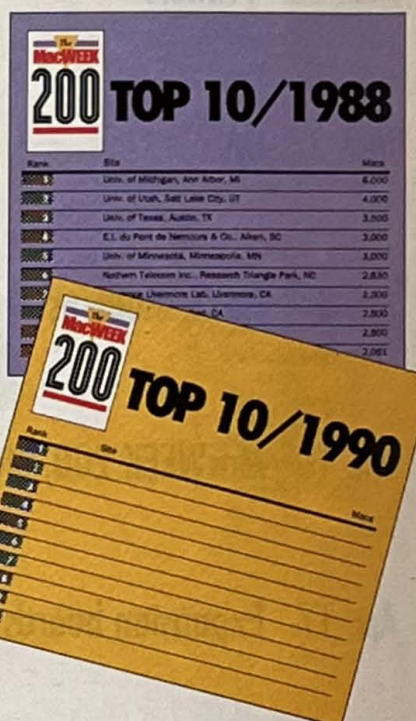
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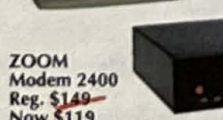
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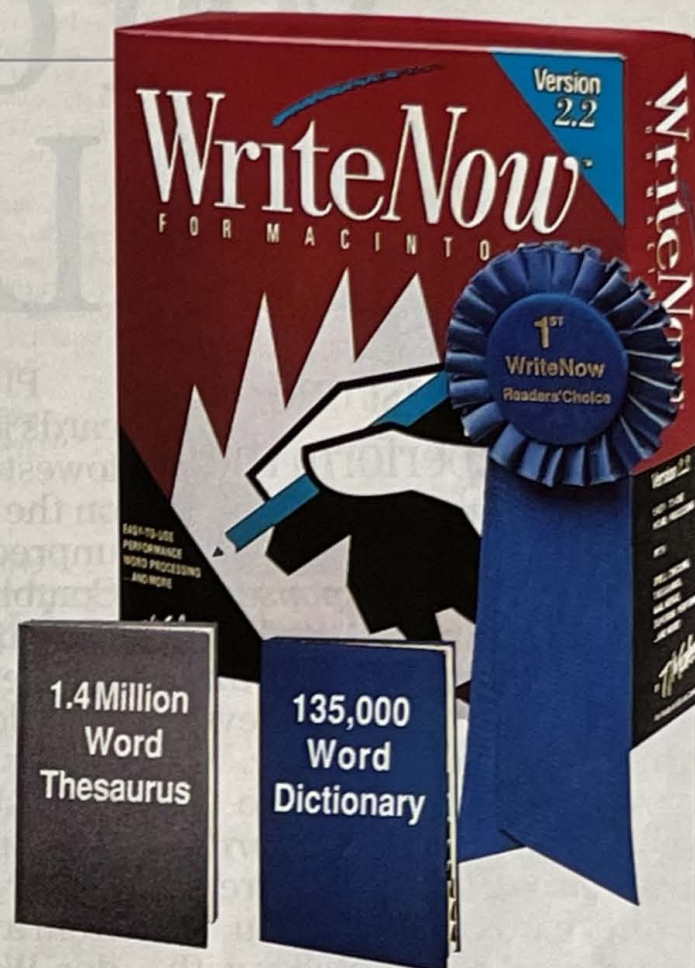
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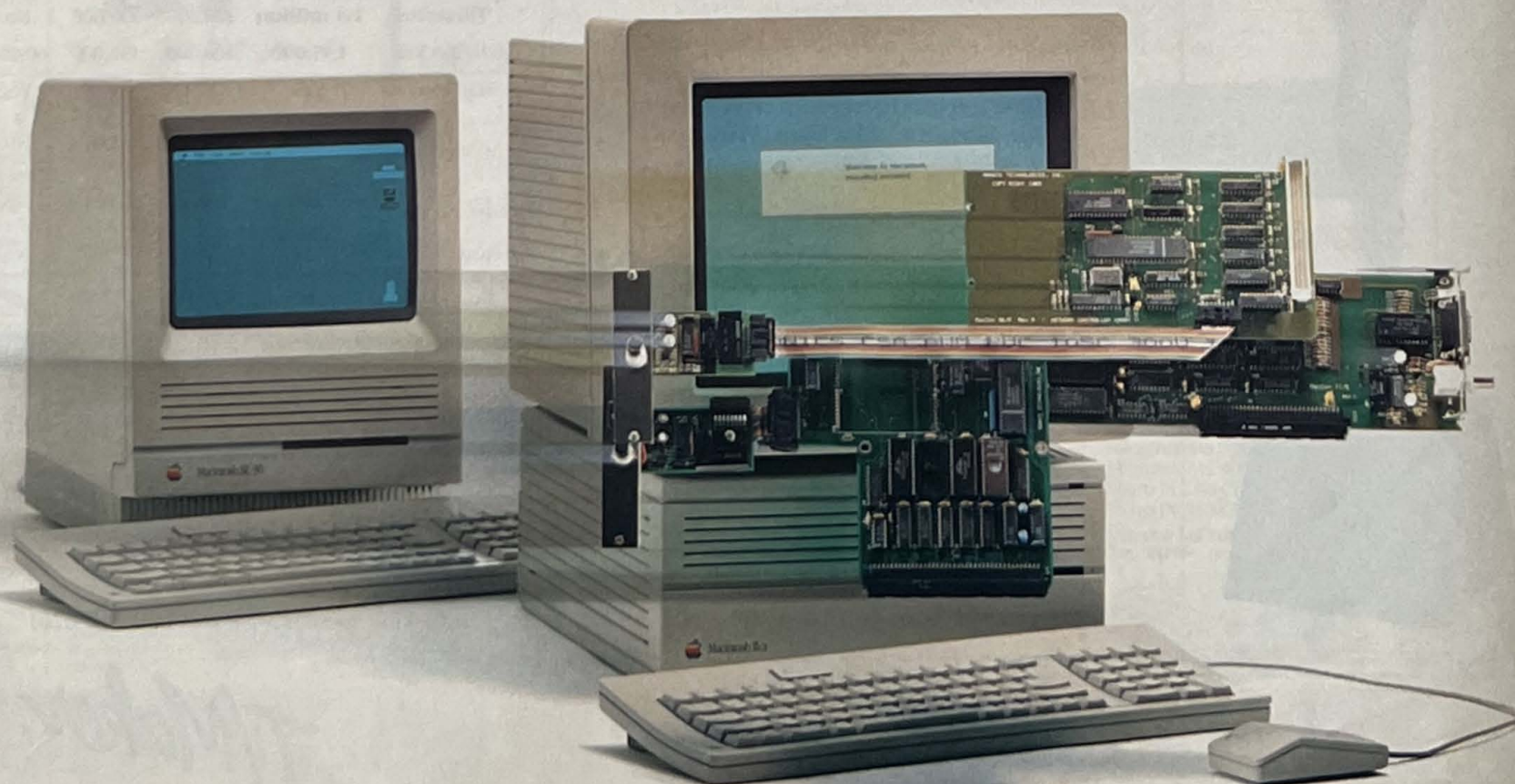
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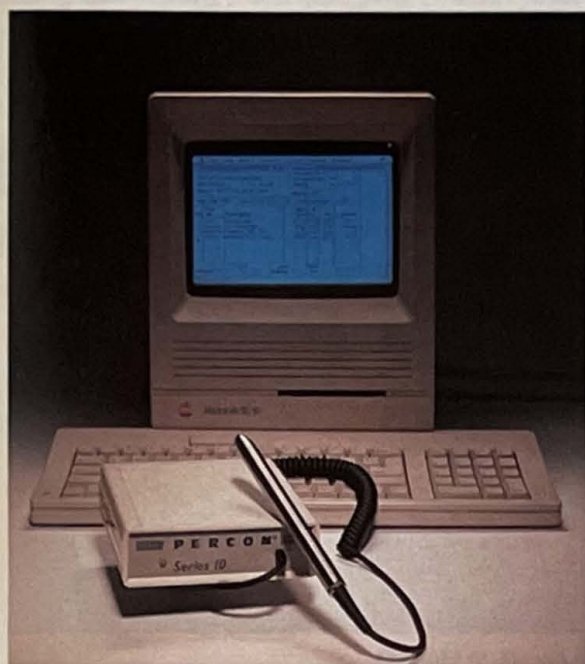
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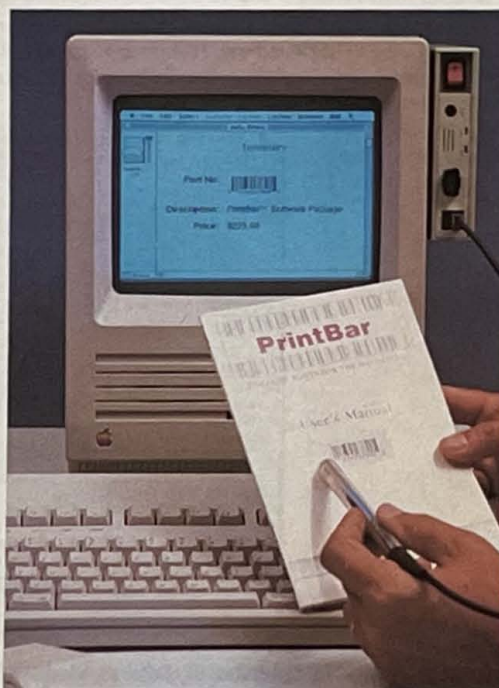
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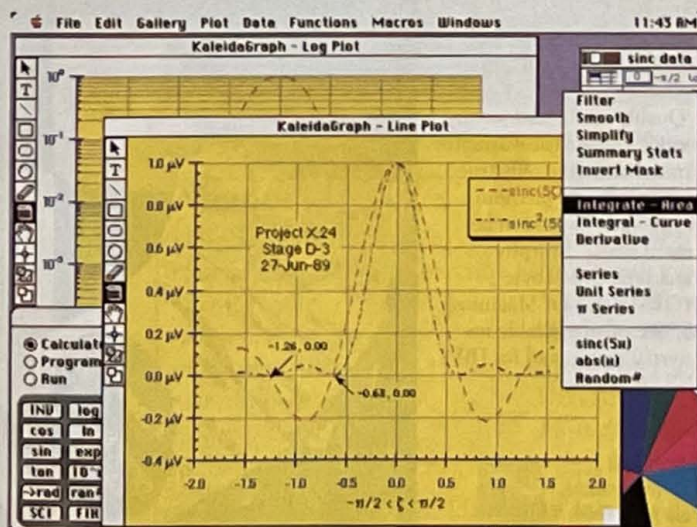
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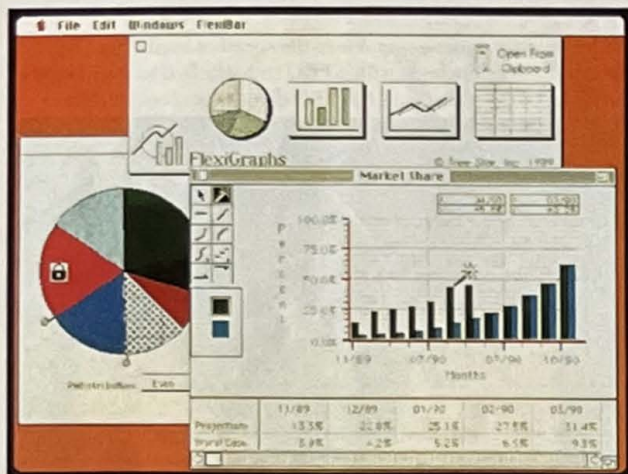
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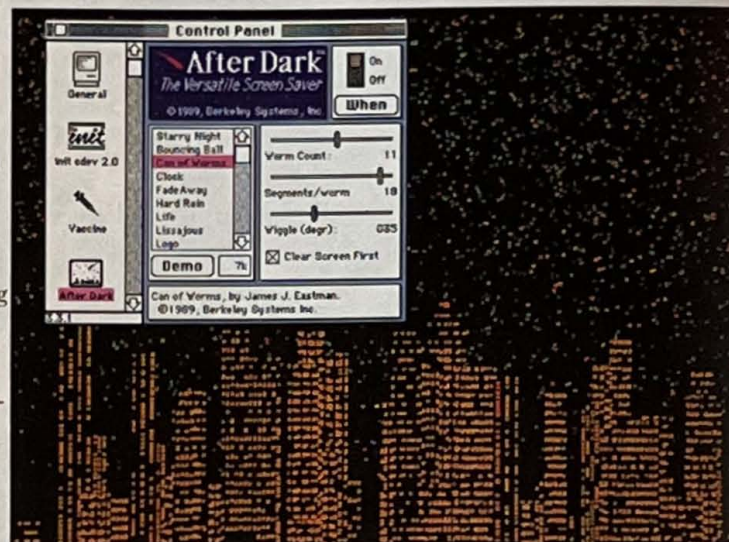
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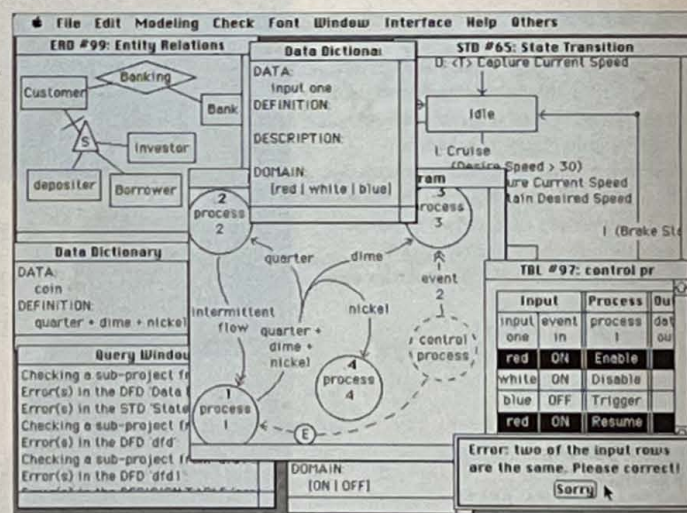


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INDEX

61 Memory Upgrades

Boards
Disk Drives
SIMMs

64 Software

Business Management
Desktop Publishing
Education
Finance
General
Graphics
Hyperstack
Investment

65 Hardware

Bar Coding
Cables
General
Peripherals

68 Special Services

General
Programming
Toner Recharging
Used Equipment

Accessories
CD ROM

68 Connectivity Miscellaneous

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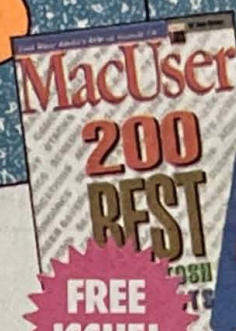
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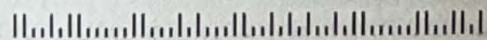
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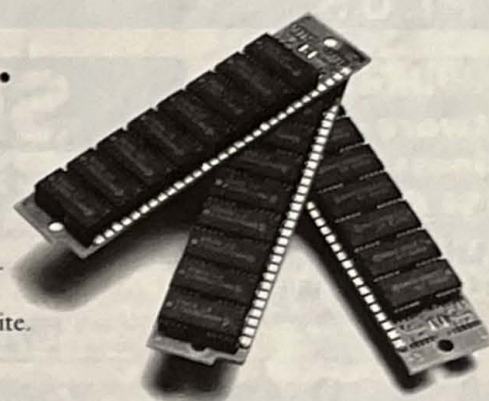
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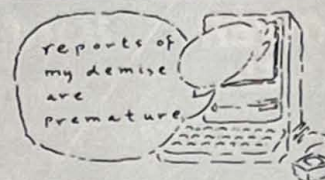
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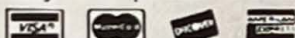
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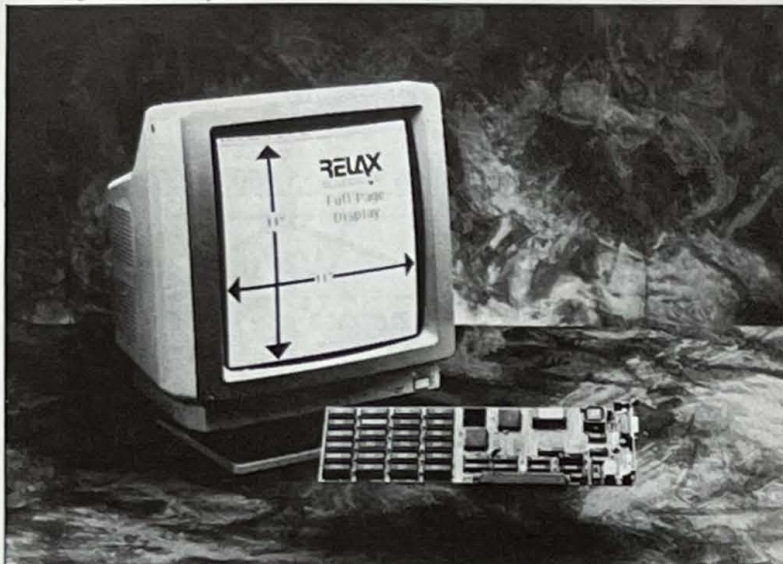
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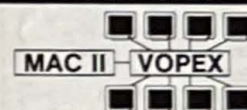
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Eori.L #2BFFFFFF,2(SP)
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Muls #6,D1
Move.L 2(SP),DO
Divs #16,DO
Add D1,DO
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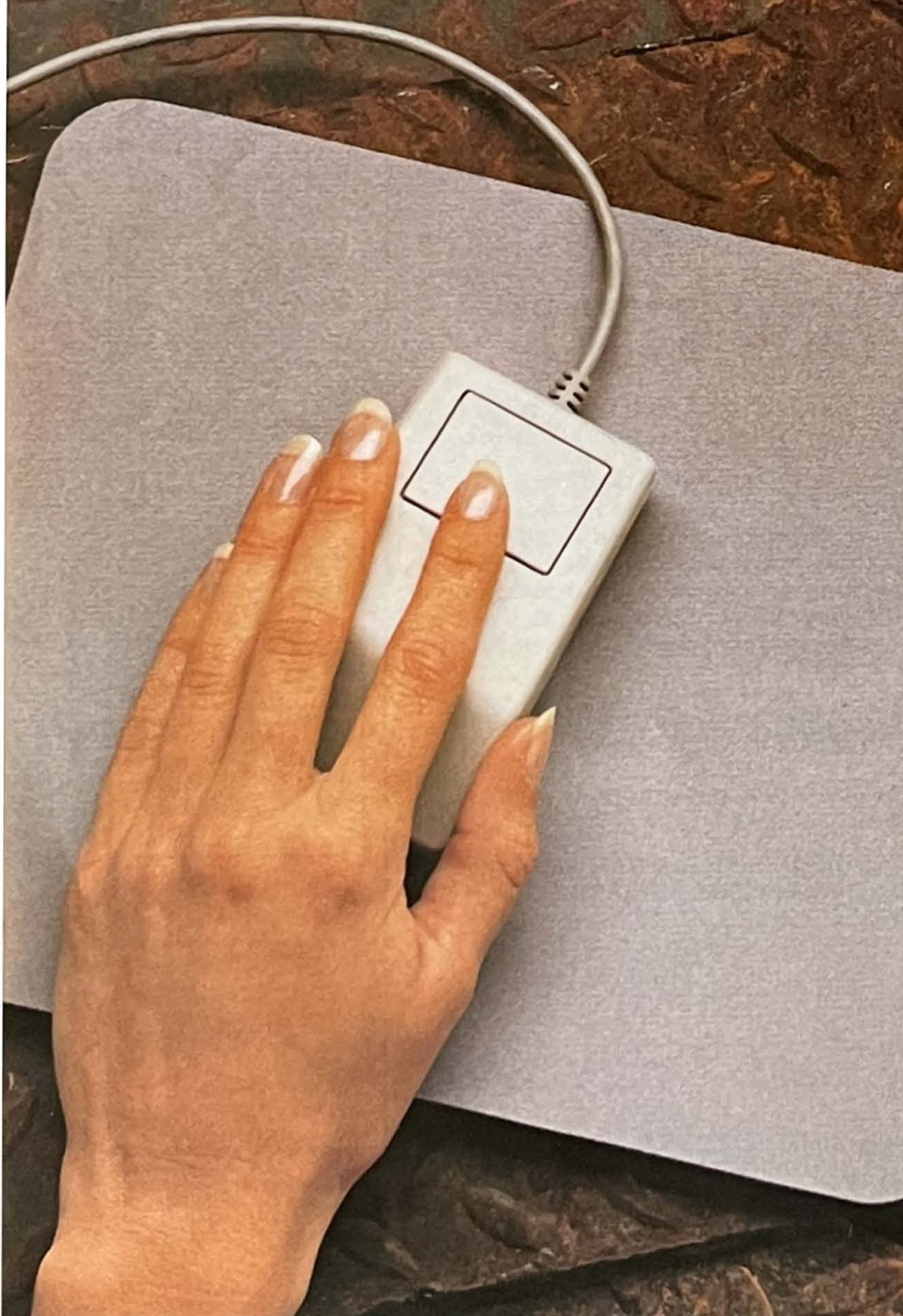
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Aapps, Preferred go their own ways

Software publisher buys independence

By Henry Norr

Memphis, Tenn. — Preferred Publishers Inc. is hardly out of toddlerhood and its Silicon Valley sibling Aapps Corp. is even younger, but the two companies have already been going through some adolescent growing pains.

Aapps, a development and marketing company in its own right, was also a holding company that owned 85 percent of Preferred's shares. But last week Aapps sold the Memphis-based software publisher to a group led by Jonathan Whitman, Preferred's president and CEO and an Aapps founder, and Ken Besser, a Memphis investor and a childhood friend of Whitman.

The buy-out, which was awaiting



Frank C. Brooks Jr., CEO of Aapps, said that the sale of Preferred will leave Aapps free "to concentrate on products that involve bringing video signals into the computer for processing."

final signatures late last week, caps a period of corporate and executive changes at the two companies.

Nolan Bushnell, the video-game pioneer and high-profile industry

personality who joined Whitman in launching Aapps a year ago, yielded day-to-day management of the company in October 1989 to Frank C. Brooks Jr. And in January, Brooks officially replaced Whitman as president and CEO of Aapps.

Under the terms of last week's buy-out, Preferred will drop the "Publishers" from its name but will keep its current products, including two popular desk accessories, Database and the Vantage text processor.

"As Yogi Berra said, it's déjà vu all over again," Whitman said. "I'm back where I belong, and you're going to see some exciting products from us."

In the next few months, he said, the company plans to adopt a new logo and "some really innovative distribution techniques." It also will port Vantage and other programs to Microsoft Windows and release several Macintosh offerings that will take the company beyond the low-cost utility market. Eventually, Whitman said, the company may also move into the hardware business, developing two concepts for input devices for which he has already sought patents.

See Preferred, next page

Marketing by example: Apple shows CD's use for internal info distribution

By Raines Cohen

San Francisco — In tune with its desire to make optical technology mainstream in 1990, Apple is promoting CD-ROM publishing as a way for companies to distribute internal information.

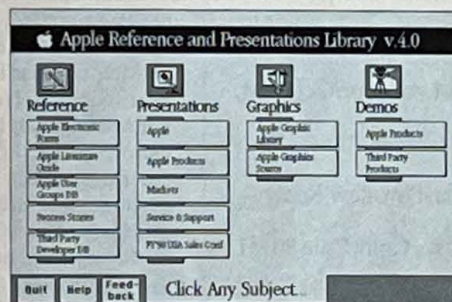
At the fifth annual CD-ROM conference here earlier this month, Apple project leaders discussed how distributing information on discs rather than publishing it on paper and videotape has helped the company save on materials and postage.

The discs also provide Apple employees with a central source of information, reducing the time they usually spend searching for information.

"We as a company are saving millions of dollars annually just in productivity," said Eileen Hart, product manager at Apple.

The Apple Reference and Presentations Library CD-ROM, first pressed in July 1988, is a prime example of Apple's internal electronic-publishing efforts. The disc, which is offered in different versions to field sales representatives and dealers, includes forms, product brochures and technical specifications as well as databases listing corporate success stories, third-party products and user groups.

Demonstration as well as fully-functional, licensed versions of some Apple and third-party applications fill out the disc to more than 600 Mbytes.



The Apple Reference and Presentations Library CD-ROM helps Apple communicate with dealers and its sales force.

Product information is in stack form to allow easy searching. It also comes in scanned image form, for rapid printing.

"The dealers can print a data sheet fairly rapidly on a LaserWriter, with sufficient quality to attach to a contract. They don't have to order a pack of 50 brochures and wait weeks for it," said David Grabel, project manager in the sales operations group of Apple USA and originator of the CD-ROM. Not only does this save paper, he said, it also helps dealers close the sale more quickly.

Users of the disc also spend less time creating presentations, Grabel said, because they can draw on the 103 Microsoft PowerPoint and Aldus Persuasion product presentations — containing more than 4,000 slides — included on the disc.

CD-ROM publishing can become even more effective when used with electronic networks, Grabel said. The internal version of the disc lets users

See CD-ROM, next page

Top 10 personal computer models sold by U.S. specialty stores channel (December '89)

1. IBM PS/2 Model 55sx
2. IBM PS/2 Model 30 286
3. Compaq Deskpro 386s
4. IBM PS/2 Model 55z
5. IBM PS/2 Model 70
6. Compaq Deskpro 286e
7. Apple Macintosh SE
8. Apple Macintosh Plus
9. Apple IIGS
10. Epson Equity II+, III, III+

Source: Computer Intelligence

Business BRIEFS



German developer, distributor take control of RagTime USA

Redwood City, Calif. — The players are the same; they've just shifted position at RagTime USA, the U.S. subsidiary established here late last year to distribute RagTime, a \$599 combination word processing, page-layout, spreadsheet and image-processing program (see MacWEEK, Jan. 9).

The German developers of RagTime, B&E Software GmbH, and its German distribution partner, Systematics GmbH, last week bought out other shareholders and acquired full ownership of the U.S. subsidiary for an undisclosed amount. Systematics holds the majority interest.

"The new investment capital has come at exactly the right time," said Jeff Galvin, founder of RagTime USA. "Increased marketing and end-user support will continue RagTime's sales growth."

The ownership change will have no effect on day-to-day operations at RagTime USA, according to Galvin, who remains president of the U.S. operation.

Apple ninth, Compaq first in satisfaction sweepstakes

San Diego — Apple received good grades from computer resellers asked to rate manufacturers on service and support, product reliability, product availability and pricing, but its leading competitors in the business market earned even higher marks.

StoreBoard/Computer Intelligence, an industry research company here, last November asked 206 computer specialty stores to rate manufacturers on a scale of 1 to 10 on each of the four issues.

Compaq Computer Corp. was the clear winner in the satisfaction sweepstakes. Apple's combined score of 30.7, out of a possible 40, left it in ninth place.

Dealer satisfaction rating*	
MANUFACTURER	SCORE
Compaq	34.3
Hewlett-Packard	32.7
NEC	32.5
IBM	32.3
Everex	32.3
ALR	31.3
Arche	31.2
Epson	31.1
Apple	30.7
AT&T	30.0
Toshiba	29.8
AST	29.8
Hyundai	29.5
Leading Edge	28.0
Commodore	27.1
Atari	26.4

*As rated by U.S. computer specialty stores, with 40 being the highest score possible. Source: StoreBoard/Computer Intelligence

The secrets of their success in software marketing

Palo Alto, Calif. — More than 20 software-industry notables will share the secrets of their success at a marketing seminar on March 17 sponsored by the Software Entrepreneurs' Forum, a non-profit group promoting the exchange of information about the software industry.

"Software Marketing Magic: The Secrets Revealed" will focus on software sales and marketing strategies for the '90s. Speakers include Marc Canter, MacroMind Inc. chairman; Charlie Jackson, president of Silicon Beach Software Inc.; Dave Winer, independent software designer and developer; Guy Kawasaki, former president of ACIUS Inc.; Jerry Barrell, editor in chief of MacWorld magazine; David Needle, editor of Computer Currents; and Dan Farber, executive editor of MacWEEK.

The eight-hour seminar, to be held in San Mateo, Calif., is \$150 for SEF members and \$250 for non-members. The non-member fee includes a one-year SEF membership, normally \$95.

For information, contact the Software Entrepreneurs' Forum at (415) 854-7219.

Agfa initiates slide service trade group Trillium now Wildflower

Dayton, Ohio — Agfa Matrix has called on the more than 4,000 slide service bureaus in the United States to join a national trade association.

The Agfa Imaging Center Association will sponsor national conferences, an electronic bulletin board and a newsletter, where members can discuss issues of concern, including

file-format and font standardization. The first meeting will be held March 18 at the National Computer Graphics Association show in Anaheim, Calif. Although Agfa Matrix will provide seed money, AICA will be an independent association. Annual dues are \$150.

For information, call AICA at (800) 776-8786 or Agfa Matrix at (800) 876-7543. □

Lombard, Ill. — The publisher of the SnapJot screen-capture and "desktop note-keeping" utility has a new name. Previously Trillium Software, the company now calls itself Wildflower Software. The \$49.95 SnapJot lets users print screen images, post them on screen or save them in PICT or Paint format.

Wildflower is at 21W171 Coronet Road, Lombard, Ill. 60148; (708) 916-9360. □

Preferred

From previous page

Whitman will remain president and CEO of the new Preferred. Besser, previously a major investor in several MS-DOS software companies, will be "an active investor who will balance my Mac fanaticism and bring a lot of business savvy to the operation," Whitman said.

Aapps created a splash last summer with the unveiling of MicroTV, an inexpensive NuBus card that lets users watch television or video from other sources on the Mac screen. Last week the company shipped an enhanced version under the name DigiVideo.

"We're going to concentrate on products that involve bringing video signals into the computer for processing," Brooks said. "Television and the microcomputer are evolving toward a unified methodology, and that means we'll see things that haven't been possible before, such as video encyclopedias and real video teleconferencing."

At next month's Macworld Expo in San Francisco, he said, Aapps will demonstrate both new products related to MicroTV and "some real fantasy stuff."

Brooks, who now commutes between Aapps' Sunnyvale, Calif., headquarters and his home in Connecticut, brings an unusual background to his new role. At one time the youngest vice president in the history of New York's prestigious Morgan Guaranty Trust Co., he left banking in 1981. In 1984 he became what he called "a 100-day chump," purchasing two Mac 128Ks during the three months following the machine's introduction.

Since then he has contributed management expertise, financing and even space at his Macworld Expo booth to a variety of Mac companies, including Dayna Communications Inc. of Salt Lake City and Knowledge Engineering Inc. of Greenwich, Conn. For a short period he even helped computer artist Mike Saenz distribute the pornographic program originally called MacPlaymate. That project — what Brooks called a "silly and embarrassing little adventure that got out of hand" — provoked a lawsuit from Playboy Enterprises Inc., which was settled only recently.

Brooks said he got involved with Aapps at the expo last August, when he went up to Whitman, a long-time acquaintance, put an arm around him and said, "Where's my half of the company?" By October, after putting up \$350,000, he had become Aapps' principal shareholder and de facto chief executive.

He and Whitman agreed that Preferred had suffered while under Aapps' control. "It wasn't getting the support it needed," Brooks said. "We insisted on financial controls, which Jonathan [Whitman] wasn't used to, but we didn't have the capital and management resources to give those products the kind of marketing they deserve." □

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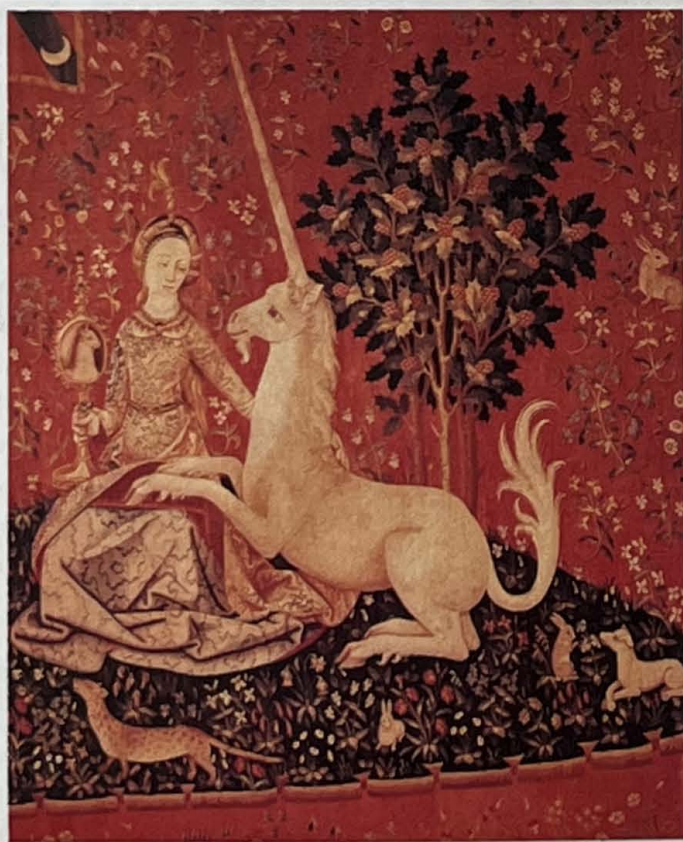
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THERE ARE STILL A FEW THINGS OUR SCANNER CAN'T CAPTURE.

CD-ROM

From previous page

order data sheets via AppleLink, Apple's worldwide electronic communications service for employees and resellers, directly from the navigation stack.

Unfortunately, ordinary Mac buyers do not have access to the disc. Grabel said such a disc might prove popular, but licensing concerns about some of the material mean that a significant effort would be required before it could be made generally available. No public-release version of the CD-ROM is currently planned, Grabel said. □

MarketWEEK

STOCKWATCH

Tech stocks rise sharply;
Apple shows market gain

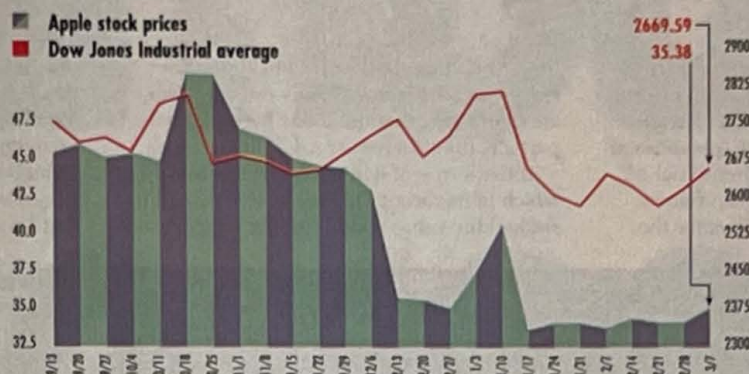
In their typically erratic manner, high-tech stocks marched sharply higher last week, paced by a 21.49 percent surge in the price of Adobe stock. Adobe Systems Inc. benefited from IBM Corp.'s announcement that it will use Adobe's font technology across IBM's Systems Application Architecture. At the same time, IBM stock rose 1.56 percent.

Businessland Inc. also had a resounding comeback, climbing 17.81 percent to \$10.75. There has been heavy insider buying at the company following the stock's recent slide to \$6.50 a share.

Other high-tech stocks in an upswing included Ashton-Tate, which increased 12.63 percent, and 3Com Corp., which rose 11.34 percent.

Apple, meanwhile, posted a relatively lackluster 4.04 percent gain in the wake of a series of reports of low employee morale.

■ Apple stock prices
■ Dow Jones Industrial average



Mac-related stocks

MAC-RELATED COMPANIES

	CLOSING 2/28/90	CLOSING 3/7/90	PERCENT CHANGE	P/E RATIO	ANNUAL HIGH	ANNUAL LOW
Adobe Systems Inc.	30.25	36.75	21.49	24	36.75	14.00
Aldus Corp.	21.00	21.25	1.19	18	22.25	12.25
Apple	34.00	35.38	4.04	10	50.38	31.88
Ashton-Tate Corp.	11.88	13.38	12.63	-12	24.00	8.75
Businessland Inc.	9.13	10.75	17.81	19	14.13	6.50
Microsoft Corp.	98.75	102.75	4.05	28	105.75	45.75
Motorola Corp.	61.75	62.25	0.81	16	63.63	39.50
Seagate Technology Inc.	18.50	18.63	0.68	10	19.75	9.38
3Com Corp.	12.13	13.50	11.34	16	28.75	10.00

INDUSTRY INDICATORS

Digital Equipment Corp.	77.00	74.50	-3.25	11	114.25	69.50
IBM Corp.	103.88	105.50	1.56	16	119.63	93.38
Sun Microsystems Inc.	22.38	23.25	3.91	53	23.88	13.00

Compiled by Nirelby International Inc., Boulder, Colo.

MARKETWATCH

Video technology targeted for growth over next five years

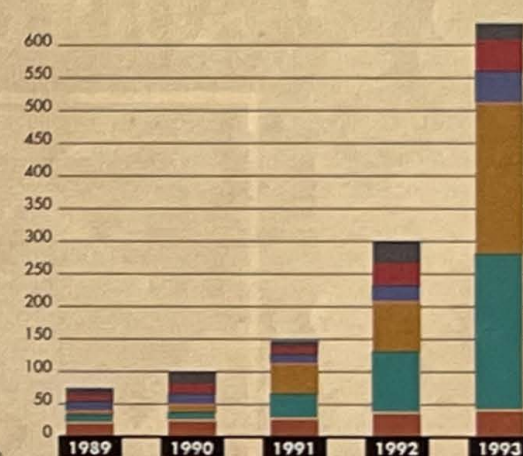
Results of a recent survey on the desktop video industry conducted by Multimedia Computing Corp. of Santa Clara, Calif., indicate that video will become a mainstream technology in the personal computer industry by 1993.

The survey concluded that sales of computer systems on which video can be displayed and manipu-

lated will grow from about 78,500 units to 640,000 units, or 37 percent each year, between 1989 and 1993. Revenues are expected to increase from about \$12 million in 1989 to about \$845 million by 1993. Multimedia Computing predicted that the largest growth will be in professional and business communications. — By Nathalie Welch

Projected sales of
video-capable
computer systems
(in thousands of units)

■ Consumer
■ Education
■ Government
■ Other business
communicators
■ Professional business
communicators
■ Hollywood &
T.V. production



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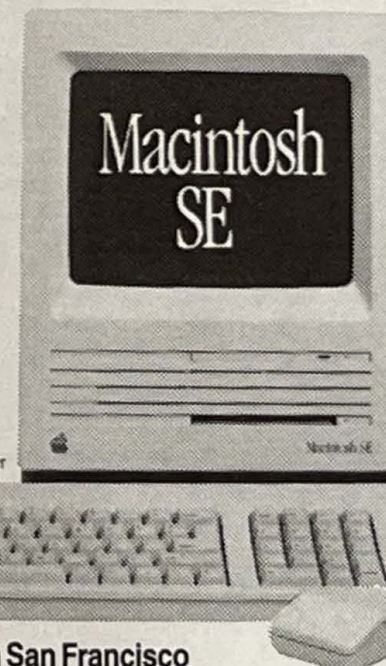
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COMPUTER FACTORY



Support cuts outrage VARs

It's become increasingly clear in recent times that politics are usually played for keeps. They don't make up those nighttime soap plots out of thin air, you know. The latest example to cross Mac the Knife's desk is a little missive speculating about why the

General Accounting Office decided to go after the big Apple-Honeywell deal (the one that would allow Apple Federal Systems to supply the Air Force with large quantities of the Mac IIx). What large, well-entrenched security-conscious vendor of mainframes, minis and micros could possibly have the

juice to encourage the GAO to attack the deal? Just wondering. In any event, rumors are circulating that the bid is back on track, partially due to a robust A/UX 2.0 release.

If that's true, it will not be thanks to Apple, which in its recent Draconian staff reductions slashed the value-added reseller support staff

to a total of five souls. Despite the fact that the efforts of several VARs made the bid possible, sources close to major Apple VARs report that they (the VARs) are collectively outraged. Technical support, according to one, is now a thing of the past. They are particularly irritated that at a VAR Council meeting held just prior to the staff cutbacks, no mention was made of the impending reductions. According to these sources, Allan Loren is beginning to look pretty good now that he's gone.

Illegal entry. With the April Macworld Expo a mere month away, the Knife is happy to report that those impish Apple employees who are believed to run a pirate bulletin board in the Cupertino area have launched a tongue-in-cheek guerrilla campaign to help outsiders gain free admission to the exhibits. If you're familiar with the BBS, just download the document called Doctor Macintosh's Crasher's Guide to MacWorld (sic). The grammar may be spotty but the document contains everything you need besides a Mac and a LaserWriter to get in on industry day, ahead of the unwashed hordes.

RAM roller coaster. Sources tell the Knife that the price of 1-Mbit SIMMs has already begun to creep up. The ostensible reason is that some high-volume Asian DRAM suppliers have begun shifting production capacity to 4-Mbit chips, although some more cynical observers suspect that manufacturers are cutting back production to stop the recent price slide. Delivery delays as long as several weeks have been reported. While no one is expecting prices to soar to the exploitative levels of yesteryear, the Knife thinks that for once there may be some truth to one of the most venerable advertising slogans: Prices may never be this low again. Forewarned is forearmed.

World view. While the eyes of the Western world have been focused on Apple's impending new CPU announcement, informants in Taiwan say that, after considerable delay, Apple has introduced the LaserWriter NTXa in Taiwan. It's a Chinese-character PostScript printer meeting the People's Republic of China's National Standards (and joining the Kanji LaserWriter NTXj for the Japanese market). Sources close to the project say the new printer comes with two PostScript fonts: Sung and Kai. Taiwanese Mac users are also the beneficiaries of ChineseTalk 6.0.3, roughly comparable to System 6.0.3 and the first upgrade to the Chinese version of the Mac OS in quite a while (the previous version was 1.2, if that's any indication). Now if the Byzantine relationship between Apple Hong Kong and the independent Apple distributor in Taiwan can be straightened out a little, the Taiwan market may really take off.

Apple is cooking in the European market, however. Toward the end of this year Apple is expected to release an Integrated Services Digital Network-compatible audio-video-data NuBus card that promises to go a long way toward expanding the horizons of the well-connected Mac. ISDN supports voice, video and data over standard telephone lines. Farallon is believed to be working closely with Apple on this project. □

If John Poindexter had spent his time talking to the Knife instead of Ollie North he now could be lounging in the sun with a MacWEEK mug instead of sweating it out in court. Learn from his example. Call the Knife at (415) 243-3500 or MCI (MactheKnife).

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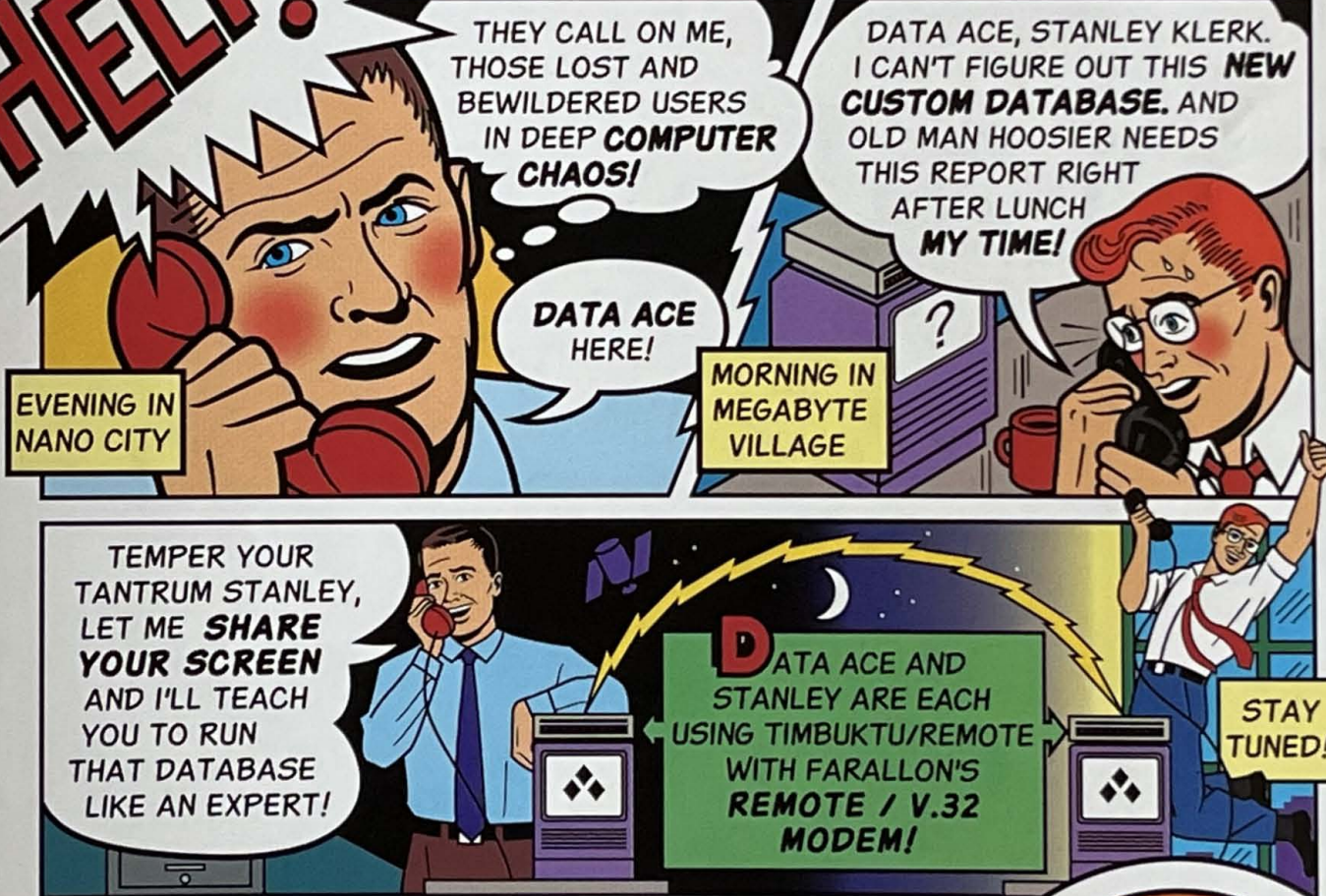
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Help Desk

INITs can jam RAM in system heap

I'm having trouble running some of my Startup documents (INITs). My Mac crashes when they're in the System folder but works when I remove them. A friend suggested I make my "system heap" bigger. What's a sys-

tem heap, and why does it need to be bigger?

Also, I recently started using MultiFinder, and some applications that ran correctly under the Finder give "out of memory" messages. What can I do about this?

Memory in the Mac is a shared resource that system functions and applications make use of. It's generally a cooperative sort of thing; programs request blocks of memory from the Memory Manager, which can either satisfy the request or not. Problems arise when a program gets sulky — or throws a temper tantrum — because it can't get the memory it has requested.

Normally, this isn't something you have to concern yourself with, but if you're taking those first tentative steps on the long road from geek to power user (these two conditions are not mutually exclusive), knowing something about how the Mac manages memory gives you a running start.



BY DAVID RAMSEY

Imagine the Mac's memory as a strip of paper. The left edge of the paper represents low memory (addresses toward zero), while the right edge represents high memory (addresses toward 1 Mbyte, 4 Mbytes or however much memory you have). Most of the system functions occupy low memory, while applications occupy high memory. The available memory is divided by the operating system into a number of regions, called heaps.

System functions get their own special heap in low memory called, unsurprisingly, the system heap. This is where things like device drivers and INIT code live, and it is best avoided by mere mortals.

Most memory not used by the system heap is available for applications. In a Mac not running MultiFinder, the system heap is a fixed size, which is determined at start-up time from a parameter stored in the boot blocks of your start-up disk. If your system heap size is 256 Kbytes, and you have a 4-Mbyte Mac, about 3.5 Mbytes will be in your application heap. Since we're not running under MultiFinder in this example, all 3.5 Mbytes will be available to the one program you can run at a time.

If you are running under MultiFinder, things are considerably different. The system heap still exists, but it's dynamic — it can expand and contract as the situation warrants. MultiFinder gets its own heap, since it's always running, and memory left over is used for the creation of an arbitrary number of application heaps.

When you are running MultiFinder and you launch a program, it looks at the program's SIZE resource to determine how large an application heap to create. Generally, a program comes with a SIZE resource preset to a vendor-determined value. If no SIZE resource has been preset, MultiFinder creates one with a 384-Kbyte default value.

You can examine the value in a program's SIZE resource by clicking once on the program's icon and selecting Get Info from the Finder's File menu. At the bottom of the Info window is a box labeled "Application Memory Size (K)." You can change this value if you wish, but MultiFinder will warn you if you try to set it below the minimum default value.

For most people, I recommend running MultiFinder. It takes more RAM, but its memory management is superior and the environment is actually more robust than the "single Finder" environment. With the advent of System 7.0, MultiFinder is all we'll have, so you might as well start getting used to it now.

MultiFinder isn't perfect. Although the system heap is dynamic under MultiFinder, it's not dynamic until MultiFinder is running, which means it's still possible to run out of system heap space during the start-up process, just as you can under single Finder.

Next time: What to do about all this.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Help Desk, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.

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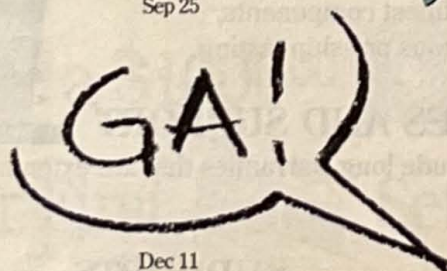
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